

**TOWARDS A SOCIO-CULTURAL APPROACH FOR THE DESIGN OF
THE HOUSE/SETTLEMENT SYSTEM.**

A case study in Ghardaia, Algeria.

By

NAIMA CHABBI, Architecte d'Etat, M.Phil.

**A thesis submitted to the University of Newcastle upon Tyne
for the degree of Doctor of Philosophy, September 1988.**

**Department of Town and Country Planning.
Newcastle upon Tyne, United Kingdom.**

NEWCASTLE UNIVERSITY LIBRARY

092 52220 9

Thesis L5030

Archives

To my son Ouassim, from whose scrapped pages
came my best inspiration...

**PAGE
NUMBERING
AS ORIGINAL**

ACKNOWLEDGMENT

I would like to acknowledge my appreciation to all those who contributed to the preparation of this thesis.

My greatest debt is to my supervisor, Dr. James Stewart, who in spite of taking early retirement from his post as lecturer, continued to show very keen interest in my work, and to be fully involved in the supervision, offering unfailing inspiration and assistance.

I am also most grateful to Mr Cameron Blackhall, who kindly took over the supervision of this work and offered constructive comments which had a vital influence in bringing this study to its present form.

Particular appreciation is due to all those in the 'DUCH' of Ghardaia, l'Atelier du M'Zab, and many other colleagues and friends at the Algiers School of Architecture, especially my former tutor Kaci Mahrouf, and Aissa Bougaila for their assistance in supplying valuable information. Perhaps my deepest gratitude is to the people of Ghardaia, who have been so generous with their time, good will, and hospitality.

Many thanks are also due to Michael Stan and Elizabeth Gittus from the Sociology Departement for their advice on the design of the questionnaire survey, and Dr Collin Whymer for his assistance with the data processing. Thanks must likewise go to the Ministry of Higher Education and Scientific Research of Algeria for making this study possible. '

Finally, particular thanks should go to my husband, Mohamed, who many times put his own Ph.D aside to help me with mine.

ABSTRACT

Rapid urbanisation which is a characteristic of most developing countries, has led to the importation of readily available solutions and to an overgeneralisation of human needs. The main objective of this study is to relate design to man's social and cultural needs.

First, the study demonstrates the relationship between cultural and social variables that influence house form and settlement patterns. This is followed by a comparative case study analysis of existing house-settlement systems in two residential areas; one a modern government built scheme, the other a traditional development, both in the M'Zab, in Southern Algeria. The main assumption was that traditional houses and settlements were culturally more responsive than their modern equivalents. However, results refuted this assumption and indicated that social change affected many of people's values and attitudes towards housing. This indicates that neither international modernism, in housing provision, nor an attempt to slavishly copy past indigenous solutions are likely to be successful.

Through studying human-environmental behaviour and using multiple-methods strategies, it is possible to bridge the gap between design and social research. A reorientation of the educational system would help towards a better communication not only between different professional practices and disciplines, but also involving the lay people. Finally, this study suggests that designing for potential adaptability a characteristic of traditional design, reflects culture, and would not only accommodate change, but would also involve active participation by people and therefore raise the level of responsibility and satisfaction.

The research combined evidence from documentary sources and field surveys. A multiple-method strategy was adopted to compare the two settlement systems of the case study. This included direct observation, interviews and trade-off games. The interview survey included three groups of people: the users, the local planning authorities and the building contractors.

By stressing the socio-cultural variables, this study does not deny the role of other variables. On the contrary, the author accepts that design activities should aim towards maintaining a balance between environmental factors and financial constraints. It is, however, argued that human needs must be given at least the same degree of importance, if workable solutions to the problem of rapid urbanisation are to be found.

Where no source reference is indicated, the table graph, diagram or figure is a contribution of the author.

LIST OF TABLES

Tb. No.	Pg. No.
3.1: Strengths and weaknesses of questionnaire survey methods....	70
3.2: Strengths and weaknesses of different observational methods.	76
4.1: The temperature range of the city of Ghardaia. (Source: Station Meteorologique de Ghardaia).....	101
4.2: Classification of the different sectors of the secondary sector. (Source: Speer, A. "Plan Directeur d' Urbanisme de Ghardaia, 1976/1988.").....	108
4.3: Classification of the different sectors of the tertiary sector. (Source: Speer, A. "Plan Directeur d' Urbanisme de Ghardaia, 1976/1988.").....	108
4.4: Development control for the housing zones. (Source: Speer, A. "Plan Directeur d' Urbanisme de Ghardaia, 1976/1988.").....	135
4.5: The 'permis de construire' -Rejections and approvals-.....	374
6.1: Satisfaction with different types of openings. (Source: Lammeri, M. 1987).....	196
6.2: Past housing experience and satisfaction with present surroundings. (Old settlement).....	375
6.3: Past housing experience and satisfaction with present surroundings. (New settlement).....	375
6.4: Type of previous dwelling and satisfaction with present surroundings. (Old settlement).....	376
6.5: Type of previous dwelling and satisfaction with present surroundings. (New settlement).....	376
6.6: Satisfaction with dwelling and lenght of residence. (Old settlement).....	377
6.7: Satisfaction with dwelling and lenght of residence. (New settlement).....	377

6.8: Satisfaction with surroundings and proximity of relatives. (Old settlement).....	378
6.9: Satisfaction with surroundings and proximity of relatives. (New settlement).....	378
10.1: Comparative initial cost equivalents in real terms of housing. (Source: Stone, 1970).....	291
A3.1: A sample of the coding system used in the study.....	379
A3.2: A sample of some of the analysis programmes used.....	380
A3.3: A sample of the programmes used to generate the graphs.....	383
A4.1: Activity patterns.....	407

LIST OF PLATES.

Pl. No.	Pg. No.
4.1: Situation of Ghardaia.....	100
4.2: The Valley of M'Zab and its different cities.....	113
4.3: The Quartier des Anciens Moudjahidines, land use map.....	127
4.4: PDU Directives (Source: Speer, A. "Plan Directeur d' Urbanisme de Ghardaia, 1976/1988.").....	136
A1.1: Situation of Algeria.....	306
A1.2: Distribution of population, mode of living, transportation and agriculture. (Source: Kurian, 1983).....	309
A1.3: Yearly rainfall in North Africa. (Source: Despois and Raynal, 1968).....	310
A1.4: The Algerian economic activity in graphs. (Source: Kurian, 1983).....	323
A3.1: Repartition of the sample in the traditional settlement.....	369
A3.2: Repartition of the sample in the new settlement.....	370

LIST OF DIAGRAMS.

Dg. No.	Pg. No.
3.1: Relationship between designers and users..... (Source: Lawrence,R. 1987).	67
3.2: Relationship between culture and behaviour (Source: Porteous,J. 1977).....	68
3.3: People's interaction with their environment.....	79
3.4: General process involved in the study.....	81
4.1: Social and political structure.....	107
5.1: Relationship between culture and and activities (Source: Rapoport,A. 1976).....	155

LIST OF GRAPHS.

Gr. No.	Pg. No.
4.1: Demographic evolution (1888,1988).....	107
4.2: People's attitudes towards the planning system.....	140
5.1: Control and physical adaptation to the housing environment.....	177
5.2: Types of modifications.....	178
5.3: Rooms used for the 'wrong' purpose.....	181
6.1: Satisfaction with surroundings.....	189
6.2: Satisfaction with privacy.....	195
6.3: satisfaction with dwelling.....	202
6.4: Level of privacy in the modern house.....	204
6.5: Level of privacy in the traditional house.....	205
6.6: Housing preferences.....	213

6.7: Evaluation of the courtyard.....	216
10.1: High building and gain of land (Source: Wenger, 1987).....	286
10.2: Saving of land at various densites.(Source: Walter, 1963)....	286

LIST OF FIGURES.

Fg. No.	Pg. No.
2.1: The impact of the 'Quibla' on the orientation of Islamic urban plans. (Source: Hakim,B. 1986).....	31
2.2: Hierarchical spatial organisation of the Islamic city.....	38
2.3: The 'Mashrabyah' as a means of providing privacy.....	40
2.4: The 'skiffa' or the final filter between public and private space.....	42
2.5: Relationship between family structure and the house form..... (Source: Moughtin,C. 1985).	43
4.1: General view of the valley of M'Zab.....	110
4.2: General layout of the traditional town of Ghardaia. (Source: Donnadieu, 1977).....	117
4.3: The traditional market or 'suq'. (Source: Donnadieu, 1977).....	121
4.4: The three different types of street in the traditional settlement.....	124
4.5: The second level 'women only' circulation system.....	126
4.6: Traditional courtyard house. (Source Donnadieu, 1977).....	129
4.7: The 'Shebbek'.....	130
4.8: General layout of the new settlement of Sidi-Abbaz.....	144
4.9: Different views of the new settlement of Sidi-Abbaz.....	145
4.10: Layout of a block of flats.....	147
4.11: The new housing area, sections and facade.....	148
5.1: Activities in public places (traditional settlement).....	165

5.2: Traditional furniture; a reconsructed traditional house in the Museum of Ghardaia.....	174
6.1: The dilapidation of the traditional settlement.....	192
6.2: The impact of modern furniture on the flexibilty of the traditional space.....	199
6.3: A privetely built dwelling.....	217
6.4: Screens to the windows as mean to increase visual privacy....	221
8.1: A traditional house that re-uses many immemorial patterns. (Source: El-Wakil, the Architectural Review. November 1986)..	252
8.2: Shustar new town, Iran. (Source: Diba, the Architectural Review. op.cit.).....	253
8.3: Dar Lamane public housing scheme in Morocco. (Source: Charai, the Architectural Review. op.cit.).....	255
9.1: Flexible courtyard houses, Kassel Donche, Holland. (Source: Hertzberger, The Architectural Review. V.CLXXXI. no.1085. July 1987).....	270
9.2: Flexible housing; Diagoon experimental carcasse houses, Delft, Holland. (Source: Hertzberger, "The scope of social architecture". Hatch,R.(ed), Van Nostrand Reinhold company, London. 1984.....	271
9.3: An example of core housing, Bangkok, Thailand. (Source: Chawalit Nitaya, Open House, V.6. no.4. 1981.....	273
10.1: An example of high density courtyard housing. (Source: Ravereau, Technique et Architecture,	288
10.2: An example of high density courtyard housing- Dwelling layout and sections (Source: Ibid).....	289
10.3: An example of high density courtyard housing- general views..	290
10.4: Evolution of the courtyard house. (Source: Vigier, "Housing in Tunis", M.I.T, USA, 1987).....	295
Al.1: Example of towns built by the French. (Source: Naval intelligence, 1942).....	328
Al.2: Evolution of Algiers from 1833 to 1846 (Source: Mechakra, The "Kasbah of Algiers". Diploma dissertation, North London Polytechnic, 1979).....	331

A1.3: Evolution of Algiers from 1880 to 1895 (Source: Ibid.).....	332
A1.4: The Danger-Prost-Rotival Plan of Algiers (Source: Deluz, 1979).....	334
A1.5: An example of French urban design (Source: Saidi, M.Sc Dissertation, Bath University, 1984.).....	336
A1.6: Typical housing development initiated by the French for the Muslim population. (Source: Deluz, 1979).....	338
A1.6a: Ibid, general views.....	339
A4.1: Comparison between old and new activity patterns and usages of places.....	405
A4.2: Comparison between traditional and new furniture groupings and usages of places.....	406

CONTENTS

1	INTRODUCTION	1
1.1	REASONS FOR THE STUDY AND OBJECTIVES	1
1.2	HYPOTHESES	5
1.3	METHODOLOGY	6
1.4	FINDINGS	8
1.5	THESIS OUTLINE	10
1.6	NOTES AND REFERENCES	15

PART ONE

2	IMPACT OF SOCIO-CULTURAL FORCES ON BUILT FORM	18
2.1	INTRODUCTION	18
2.2	CONCEPTUALISATION OF CULTURE	21
2.3	RELIGIOUS BELIEFS	23
2.3.1	Land subdivision and the origin of the cellular character of the Islamic city	24
2.3.1.1	'Shuf-ah' or Pre-emption	25
2.3.1.2	Inheritance laws	26
2.3.2	The large variety of partial property rights and the ensuing infinite divisions of space	27
2.3.2.3	The 'Waqf' and the perpetuity of property	27
2.3.3	Islam's prescription against life imitation and its impact on aesthetics in architectural and urban design	28
2.3.4	The 'Qibla' and its impact on the spatial organisation of the traditional Islamic city	29
2.3.5	Sexual segregation and its influence on the built environment	31
2.4	PRIVACY AND ATTITUDES TOWARDS THE CONTROL OF SOCIAL CONTACT	32
2.4.1	Different conceptions of privacy between different cultures	34
2.4.2	Privacy regulation	36
2.4.2.1	Circulation pattern as a social control mechanism	37
2.4.2.2	Introversion as a mean of achieving privacy	38
2.4.2.3	The double bended entrance or the final filter between public and private spaces	39
2.4.2.4	The placement of doors within the street	40
2.5	FAMILY STRUCTURE, KINSHIP, SOCIAL SYSTEMS AND FORMS	41
2.5.1	Family structure and house form	42
2.6	ECONOMICS WITHIN A CULTURE SYSTEM -IMPACT OF ECONOMIC AND TECHNOLOGICAL DEVELOPMENT ON SETTLEMENT PATTERNS-	46
2.6.1	Effects of economic changes on urban and rural communities - the growth of the industrial town -	46
2.6.2	Impact of individualized wage remuneration on family	

and social structures	51
2.6.3 Economics and built form	53
2.7 CONCLUSIONS	55
2.8 NOTES AND REFERENCES	58

PART TWO

3 RESEARCH METHODS AND MEASUREMENT TECHNIQUES	64
3.1 INTRODUCTION	64
3.2 THE REASONS BEHIND STUDYING ENVIRONMENTAL BEHAVIOUR	65
3.3 OVERVIEW OF THE DIFFERENT RESEARCH METHODS	67
3.3.1 Questionnaire survey	69
3.3.2 Trade-off-Games	72
3.3.3 Observations	74
3.3.4 Multiple research methods	76
3.4 THE ENQUIRY: using multi-methods research	78
3.4.1 The selection of the study area	85
3.4.2 Selecting the Survey Areas	85
3.4.3 Selecting the Households to be Interviewed	86
3.4.4 Selecting the Planning Authorities and the Building contractors	88
3.4.5 Carrying out the Research	89
3.4.6 Methods of Analysis	92
3.5 CONCLUSIONS	93
3.6 NOTES AND REFERENCES	95
4 GENERAL DESCRIPTION OF THE STUDY AREA	99
4.1 INTRODUCTION	99
4.2 THE SITE	99
4.3 THE CLIMATE	100
4.4 THE WATER SYSTEM	102
4.5 HISTORICAL BACKGROUND	102
4.6 DEMOGRAPHIC STRUCTURE	104
4.7 SOCIAL AND POLITICAL STRUCTURE	104
4.8 ECONOMY	106
4.8.1 The primary sector	106
4.8.2 The secondary sector	107
4.8.3 The tertiary sector	108
4.9 THE URBAN SETTLEMENTS	109
4.9.1 PLANNING CHARACTERISTICS OF THE INDIGENOUS SETTLEMENTS	112
4.9.1.5 Principles of organisation of the traditional urban settlements	113
4.9.1.6 Urban and architectural characteristics	115
4.9.1.7 The generator of the city	117
4.9.1.8 The market	120
4.9.1.9 The streets	121
4.9.1.10 The residential area	124
4.9.1.11 House design and layout	126
4.9.2 Normative planning and the characteristics of the modern settlement of Sidi-Abbaz	129

4.9.2.12	The 'Plan Directeur d'Urbanisme or PDU'	132
4.9.2.13	The 'PDU' for the M'zab (1973-1988)	133
4.9.2.14	Development control and planning standards: the 'permis de construire'	136
4.9.2.15	Criteria for granting the 'permis de construire'	139
4.9.2.16	The 'certificat de conformite'	142
4.10	MORPHOLOGY AND PREDOMINANT FEATURES OF THE MODERN SETTLEMENT	143
4.10.17	The standardized or prototype residential unit	144
4.11	CONCLUSIONS	147
4.12	NOTES AND REFERENCES	151
5	PRINCIPLES OF SPACE USE - ACTIVITY PATTERNS AND BEHAVIOUR-	153
5.1	INTRODUCTION	153
5.2	THE CULTURE/ACTIVITY RELATIONSHIP	154
5.2.1	Activity Characteristics	155
5.3	ACTIVITY PATTERN AND BEHAVIOUR IN PUBLIC PLACES	160
5.3.1	Traditional settlement: Quartier des Anciens Moudjahidines	162
5.3.2	The modern settlement: Sidi-Abbaz	164
5.3.3	Children's play	167
5.3.4	Women's activities	168
5.4	PRINCIPLES OF SPACE USE IN THE DWELLING	169
5.5	CEREMONIAL AND RITUAL ACTIVITIES	171
5.6	MODERN FURNITURE AND ITS IMPACT ON THE FLEXIBILITY OF THE DWELLING	172
5.7	RESIDENTS' ATTEMPTS OR/AND DESIRES TO ALTER THEIR DWELLINGS	174
5.8	CONCLUSIONS	181
5.9	NOTES AND REFERENCES	185
5.9.1	notes to diagram 5.1	186
6	USERS SATISFACTION AND ENVIRONMENTAL PREFERENCES	187
6.1	INTRODUCTION	187
6.2	SATISFACTION WITH RESIDENTIAL ENVIRONMENT	188
6.2.1	Satisfaction with the dwelling	198
6.3	SATISFACTION AND HOUSEHOLD'S CHARACTERISTICS	204
6.3.1	Satisfaction and household's type, age and size	206
6.3.2	Origin, type of previous dwelling and satisfaction	207
6.3.3	Length of residence and satisfaction	209
6.3.4	Proximity of relatives and satisfaction	210
6.4	HOUSING PREFERENCES	211
6.4.1	The courtyard	211
6.4.2	Type of streets	216
6.4.3	Terraces	219
6.4.4	Mashrabyah or screens for the windows	219
6.4.5	Guest rooms	221
6.4.6	location	223
6.5	CONCLUSIONS	224
6.6	NOTES AND REFERENCES	226

7 SUMMARY OF THE FINDINGS: SOCIAL CHANGE AND ITS IMPACT ON ATTITUDES TO SETTLEMENT PATTERNS 228

7.1 INTRODUCTION 228

7.2 THE PROCESS OF CHANGE 229

7.3 COLONISATION AS A POWERFUL INSTRUMENT OF CHANGE 232

7.4 ECONOMIC DEVELOPMENT AND TECHNOLOGICAL CHANGE 233

7.5 CHANGE IN SOCIAL INTERACTION AND FAMILY STRUCTURE 234

7.6 CHANGE IN THE WOMAN'S SOCIAL STATUS 236

7.7 CHANGES IN MEN'S ATTITUDES 238

7.8 CHANGE IN HOUSEHOLD DOMESTIC TECHNOLOGY: Its impact on the flexibility of the traditional space 239

7.9 THE 'PDU' AS AN INSTRUMENT TO ACCOMMODATE CHANGE 241

7.10 CONCLUSIONS 242

7.11 NOTES AND REFERENCES 244

PART THREE

8 THE QUEST FOR CULTURAL IDENTITY 246

8.1 INTRODUCTION 246

8.2 THE QUESTION OF IDENTITY: What is identity? 248

8.3 DIFFERENT APPROACHES IN ADDRESSING THE PROBLEM OF IDENTITY 250

8.4 CONCLUSIONS 254

8.5 NOTES AND REFERENCES 257

9 TOWARDS A CONTEXTUAL APPROACH FOR RESEARCH AND DESIGN 259

9.1 INTRODUCTION 259

9.2 ON DESIGNING CULTURALLY RESPONSIVE ENVIRONMENTS: 261

9.2.1 Involving people in the decision making process . . 262

9.2.2 Linking social research and design 265

9.2.3 Designing for potential adaptability 267

9.3 NOTES AND REFERENCES 275

10 GENERAL CONCLUSION 276

EPILOGUE 302

A1 PHYSICAL AND SOCIAL GEOGRAPHY OF ALGERIA 305

A1.1 INTRODUCTION 305

A1.2 POPULATION 306

A1.3 PHYSICAL AND CLIMATIC CHARACTERISICS 308

A1.4 EARLY HISTORY 309

A1.5 THE FRENCH CONQUEST 314

A1.6 THE INDEPENDENT STATE 319

A1.7 ECONOMY 322

A1.8 THE SETTLEMENT SYSTEM 327

A1.8.1 Transformation of the settlement system 327

A1.8.2 The Colonial urbanisation process 330

A1.9 THE SETTLEMENT SYSTEM AFTER INDEPENDENCE 342

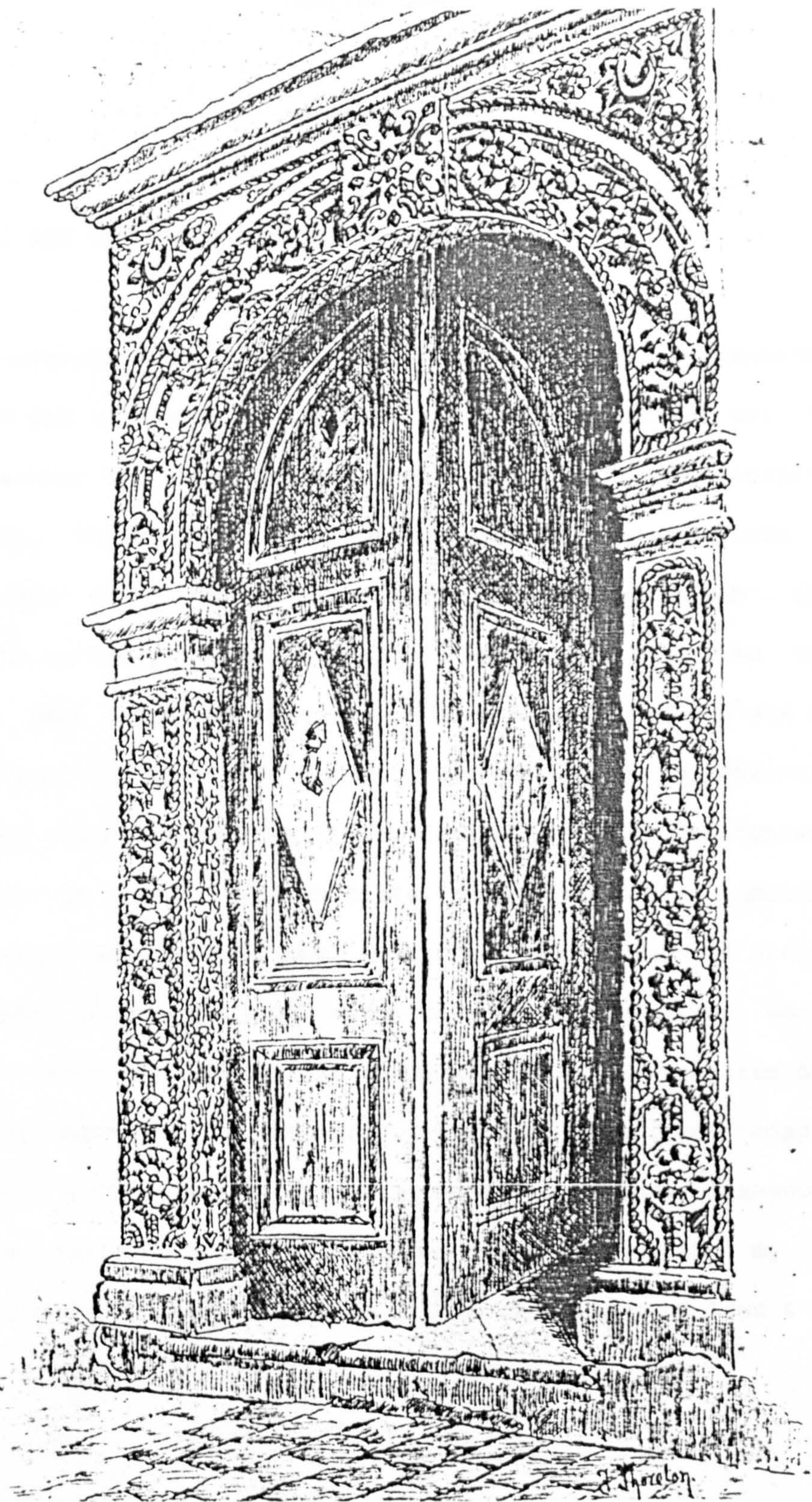
A1.10 PLANNING AFTER INDEPENDENCE 343

A1.10.1 HOUSING AND SOCIAL INFRASTRUCTURE 345

A1.11 NOTES AND REFERENCES 348

A2	ISLAMIC LAW	353
A2.1	BIRTH OF THE DIFFERENT SCHOOLS OF LAW	353
A2.1.1	Major sources of law	354
A2.2	DEVELOPMENT OF BUILDING AND URBAN DESIGN GUIDELINES	357
A2.3	INSTITUTIONS IN CHARGE OF SUPERVISING THE TRADITIONAL PHYSICAL ENVIRONMENT	359
A2.3.1	The 'Qadi'	359
A2.3.2	Ahl-al-Khibrah (experts)	360
A2.3.3	The Muhtasib	362
A2.4	NOTES AND REFERENCES	364
A3	THE SURVEY	366
A3.1	SAMPLING	367
A3.2	THE INTERVIEWS SCHEDULES	369
A3.3	METHODS OF ANALYSIS	373
A4	A STUDY OF THE ALGERIAN FAMILY ACTIVITY PATTERNS	374
A4.1	PREPARING MEALS	374
A4.2	HAVING MEALS	399
A4.3	WASHING DISHES	400
A4.4	WASHING CLOTHES	401
A4.5	WASHING THE DWELLING'S FLOOR	401
A4.6	BATHING	402
A4.7	SLEEPING	402
A4.8	RELAXING	403
A4.9	RECEIVING GUESTS	403
A4.10	PERSONAL PRIVACY	404
	GLOSSARY	408
	REFERENCES	410

CHAPTER ONE



ALGIERS : DOORWAY, RUE MEDEA

CHAPTER ONE

INTRODUCTION

1.1 REASONS FOR THE STUDY AND OBJECTIVES

The interest which provided the incentive for this research dates from 1979 and had roots in a final-year project carried out jointly by the author and three other students at the school of architecture of Algiers. The project consisted of restructuring 'Bounoura Ksar', one of the five 'Ksours' or old towns of the 'M'zab', an urban settlement in the Algerian Sahara. It was during that time that we came to meet Andre Ravereau [1], a French architect who was settled in the M'zab, and were fascinated by his commitment to penetrate the very deep structure of traditional design in search for contemporary solutions. At a time when the elite, avid for glossy images with technological and international overtones, was engaged in prestigious development, he pleaded that even more than in other societies, perhaps, Third World countries needed to base the qualities of their built environment on the recovery of age-old principles adapted to the local environment. This interest in cultural frameworks was reinforced when I came across Rapoport's writings during my studies for the M.phil in Urban Design at the department of Town & Country Planning of Newcastle upon Tyne University.

Another incentive was the housing crisis that Algeria, like many other developing countries, is experiencing. These housing emergencies created a high demand justifying mass-produced housing which, very often, ignored the cultural values of the indigenous society. The neglect of the social and cultural variables was particularly important in those situations where policy makers believed that economic criteria were fundamental and all that low-income families needed was shelter. However, the rapidity with which Post-War housing in Europe, built with the notion in mind of adequate shelter, became viewed as unacceptable is a good example of how necessary it is to look beyond shelter.

Furthermore, the extremely rapid urbanisation, characteristic of most developing countries, has led to an importation of already available solutions. These were very often incompatible with the indigenous culture and usually consisted of norms, standards and regulations that contributed to the development of forms according to the ideology of the Modern Movement. However, evidence has shown that throughout the world the idea of 'universal language of form' in design, particularly in mass-housing, has failed [2]. For example, the quartier modern Fruges in Pessac reflected many of the central points of Le Corbusier's theory. Some years later, a post-occupancy evaluation revealed a gap between the architect's belief in International Style and what local culture regarded as an acceptable residential environment. Boudon (1976)[3] showed that people had altered their housing to conform, in both interior and exterior

appearance, with the basic features of the regional type.

This non respect of the local traditions has recently come under intense criticism by a growing number of scholars and professionals who assert the importance of a cultural interpretation of architectural and urban form [4]. During the past decade, Rapoport (1969)[5] has been a leading exponent of the view that social and cultural factors have a primary influence upon the design of houses. He later extended such a view to urban settings (Rapoport, 1977)[6]. Lawrence (1987)[7] admits that the significance of social and cultural factors as discussed by Rapoport was irrefutable. But he argues that a historical perspective is necessary for understanding how both physical and social factors change and how these kinds of transformation are embodied in the design and use of the built environment.

This study accepts cues from both Rapoport's and Lawrence's theories and seeks to relate design to man's social and cultural needs. It identifies and explains those cultural and social variables that can be used to examine the house settlement system. It illustrates how these variables are operative in the use of the residential environment, and shows that it is essential to account for these variables when formulating design and planning policies for the development of new residential environments. However, by stressing the socio-cultural factors, this study does not deny the importance of any other factors. On the contrary, it is the author's

strong belief that the main object of design activities should be to provide an urban form that facilitates and maintains a functional balance between human needs, environmental factors and financial constraints.

In fact, the stress on the social and cultural variables is an attempt to redress the balance which has been disequilibrated by their neglect. Hence, by opting for an anthropological approach, that is an approach mainly based on an examination of the human aspects that help in determining physical forms, particularly those related to behavioural patterns and culture, this study attempts to supplement and complement the various other urban design and housing researches [8]. Therefore, although the main theme of the study is a discussion of the social and cultural issues related to the design and use of the built environment, and particularly the house/settlement system, this study does not ignore that there are climatic, political, economic, technological and other issues of great complexity and delicacy in addition to the cultural dimension. Indeed, the 'successful and good' solution is the one that rationally uses the available resources to fully express the preferences, aspirations and other needs of the group for whom it is meant.

What this study argues is that what is considered as 'good' or what is perceived as desirable or undesirable environmental quality is culturally variable, as are standards of privacy and the like [9]. Thus an overgeneralisation of human needs is quite wrong. Thinking

that people's needs and attitudes are static is equally wrong. Societies are characterised by both change and continuity, and replicating design of some traditional 'Golden Age' is equally prone to failure.

1.2 HYPOTHESES

A set of leading hypotheses focussed the research and guided the enquiry.

Hypothesis 1 :

House form and settlement patterns are not simply the result of physical forces but also the outcome of a complex set of socio-cultural factors. By stressing the socio-cultural forces, I do not argue for the exclusivity of their action nor their determinant role.

Hypothesis 2 :

Mass-produced housing ignored the socio-cultural needs of Algerian society. It hardly supported commonly desired activities, did not fulfill the required level of privacy and did not facilitate social interaction; hence, it disturbed the overall well being of its inhabitants.

Hypothesis 3 :

Cross-cultural influences which are usually transmitted by conquest, trade, and/or mass-media, lead to changes of values and affect attitudes to settlement patterns and built form.

1.3 METHODOLOGY

The research combines evidence from documentary sources and field surveys. First, the fact that two cultures in an identical setting usually create different built environments is used to demonstrate the relationship between cultural forces and the built environment. The colonial city is also drawn upon as a useful setting for proving the importance of cultural variables in the design and use of the built environment, since climate, site and other variables tend to be constant and the role of social and cultural variables can be clearly demonstrated.

This is followed by a detailed analysis of the role of the different social and cultural forces in helping to influence the evolving spacial form and the use of the house/settlement system. Diverse sources of information were used in such analysis. In the study of the impact of religion on the form and use of the built environment, for example, the area of Islamic Law, (fiqh) proved to be the best source, as the problems were well recognized and addressed within the framework of Islamic values and ethics. The legal material used included jurist opinion from the first three

centuries of Islam.

The long term aim behind this research is to facilitate the design of culture-responsive environments. One useful way of understanding what is responsive could be achieved by a comparative analysis of existing dwellings and settlements. The 'Quartiers des Anciens Moudjahidines' and Sidi-Abbaz, respectively a traditional and a modern neighbourhood of Ghardaia, the main city of the M'zab region in Algeria, are used as case studies. They are extensively studied by using multiple research methods including field work, studies of the design and layout of the area, interviews, direct observation and archival records. Three groups of people - the residents, planning officers and architects, and building contractors - provided information.

The interview survey has primarily been concerned with how the residents in each settlement experienced, appropriated and evaluated their residential environment in general and their dwellings in particular. A simulation game (trade-off game) uncovered their attitudes and priorities to different housing types. Furthermore, emphasis was given to direct observation. Photographs, sketches and notes were used to record the arrangement and style of furniture as well as those changes which the residents had made to the physical fabric of their dwellings. Although the sample size was relatively small, the personal element yielded a depth and richness of detail which would have been lost had the sample been large.

A questionnaire survey of local housing authorities and building contractors' was used to examine how the planning and construction process works from within and without. This was supplemented by analysis of diverse documentary sources including the 'PDU' (Plan Directeur d' Urbanisme) or 'master plan' scheme and the 'permis de construire' (planning & construction permission) applications submitted during the first six months of 1986.

More information about the interviewees aspirations was collected by an analysis of the architectural plans and visits to selected samples of private housing development under construction.

1.4 FINDINGS

The findings of the research are varied and some of them unpredictable. The function of cultural systems in helping to determine house forms and settlement patterns is increasingly recognised in theories of architecture and settlement design [9], establishing the validity of the first hypothesis. However, the second hypothesis, which postulates that a traditional settlement is culturally more responsive than a modern one, is partially refuted as neither settlement is found totally responsive to today's users' needs and desires. The lack of change in the adobe traditional settlement which is patterned after an earlier lifestyle, and the radical, unrelated changes in the modern settlement which is mostly patterned after alien social and climatic environments, are both exemplified. The study reveals that cross-cultural influences have

affected many aspects of the Algerian family's lifestyle and its attitude to the house/settlement system, which establishes the validity of the third hypothesis.

A general impression that emerges from the research is that there is a conflict between tradition and aspirations. As tradition tends to be modified by aspirations, so these latter are restrained by tradition. This conflict is reflected in the residential environment where the juxtaposition of old and new attests to the great discontinuity between the past and the present. It is against this loss of continuity that some of Algeria's intellectual elite engaged in the search for a 'cultural identity'[10].

This study suggests that there is no 'identity kit' and that any search for an authentic regionalism should look beyond easy imitations of local traditions. Designers and policy makers should resist the temptation to impress the stamp of their own personalities and beliefs, regard the demands of the users as of paramount importance, and base any design directly on the needs and requirements of the users.

Participation, where people are involved in the decision making process, and flexibility that allows for more change and personalisation, would for example not only create a place with unique authentic expression but a place with which the users themselves could identify.

1.5 THESIS OUTLINE

The thesis is divided into three related parts complemented by four appendices.

Part I which consists of one chapter attempts to demonstrate the role of socio-cultural forces in helping to determine built form, and hence shows the necessity to account for these variables when formulating planning and design policies. It begins by conceptualizing culture. Then the role of religious beliefs and values, attitudes towards social control and privacy, social interaction, family and kinship structures, and finally economic values, in the shaping of the built environment, are respectively demonstrated and illustrated.

Part II then deals with the remaining two hypotheses of the study and presents a comparative analysis of a traditional, locally built, and a modern, professionally designed housing area in Ghardaia, the main city of the M'Zab region in Algeria. A particular focus is on the way in which these two settlements are used, experienced and evaluated by their inhabitants and the contradictions that emerge between locally built and professionally designed housing. The main idea behind this analysis is that it will not only establish which, if any, of these environments meet people's socio-cultural needs and therefore help in understanding what a culture responsive environment is. But it will also help in identifying people's future needs and preferences.

Chapter 3 begins this part of the study and describes the research methods and measurement techniques used in the analysis.

Chapter 4 then presents a general picture of the study area, its geographical, historical, political and economic setting as well as its urban and architectural characteristics. This is followed by a discussion of the methods of development control used in the area.

Chapter 5 investigates the principles of space use - activity patterns and behaviour - in the traditional and modern settlements. It is not only concerned with how different places are used or where different activities occur, but also when these activities are conducted, by whom, and what these activities mean for the different groups of people. This chapter also illustrates the residents' attempts desires to alter their home environment.

Chapter 6 deals with place satisfaction and the dwellers' attitudes towards their dwelling and its surroundings, and with their environmental preferences. The objective of this chapter is not only to compare the levels of satisfaction and environmental preferences in the two settlements, but also to identify what factors contribute to make people satisfied with their environments and which of these factors can be modified by designers.

Chapter 7 brings together the findings of the study and concludes part II. It reveals that social change has affected many aspects of

Algerian society, creating conceptual conflicts between aspirations and tradition and influencing people's attitudes towards settlement patterns and built form.

Part III presents an alternative approach for designing culture responsive housing environments, some emergent hypotheses, the general conclusion, and the epilogue of the study. It begins with a short chapter (chapter 8), arguing that imitations or reproductions of local traditions would not necessarily create culture responsive environments. And that trying to create or respect a 'prescribed cultural identity' (in this case an Islamic identity) would lead to a complete depreciation of people's real needs and aspirations, as cultural and social variables are dynamic and change over time.

Then, chapter 9 illustrates an alternative approach for designing culture responsive environments. Culture being carried in the minds of people who actively perceive, evaluate and act; this approach suggests the use of pluri-disciplinary research to study and understand people's behaviour, uncover their needs, preferences and aspirations and integrate them into the design decision making process. Furthermore, since culture has a dynamic character, designing for 'potential adaptability' instead of a 'tight-fit' design, would not only accommodate change but also allow for more personalisation.

By proposing an alternative design approach I do not pretend to have offered fool proof solutions but ideas that may guide further research. This study is not an end in itself. It is intended as contribution in the larger field of research into cultural aspects of design. The author's aim is to examine the culture/environment relationship from a temporal perspective, and to trace the patterns of continuity and discontinuity through time, noting the persistent and changing elements.

Chapter 10 concludes the study.

The appendices provide further details of many issues treated in the main text. Appendix I is designed for the reader unfamiliar with Algeria, and outlines the country's physical and social geography.

Appendix II on its part discusses the main sources of Islamic Law, and the development of building and design guidelines. It also gives some selected Qur'anic verses and 'Hadith' referenced in the main text.

Appendix III gives more details about the survey, and provides sample copies of the interview questionnaires, and the trade-off game. It also contains the sampling frames, and the different tables mentioned in the text.

Appendix IV illustrates the activity patterns of the Algerian family and their distribution in space and time. The main objective of this is to show that although some activities seem basic and common to all cultures, there are in fact, differences in the way they are perceived and carried out

1.6 NOTES AND REFERENCES

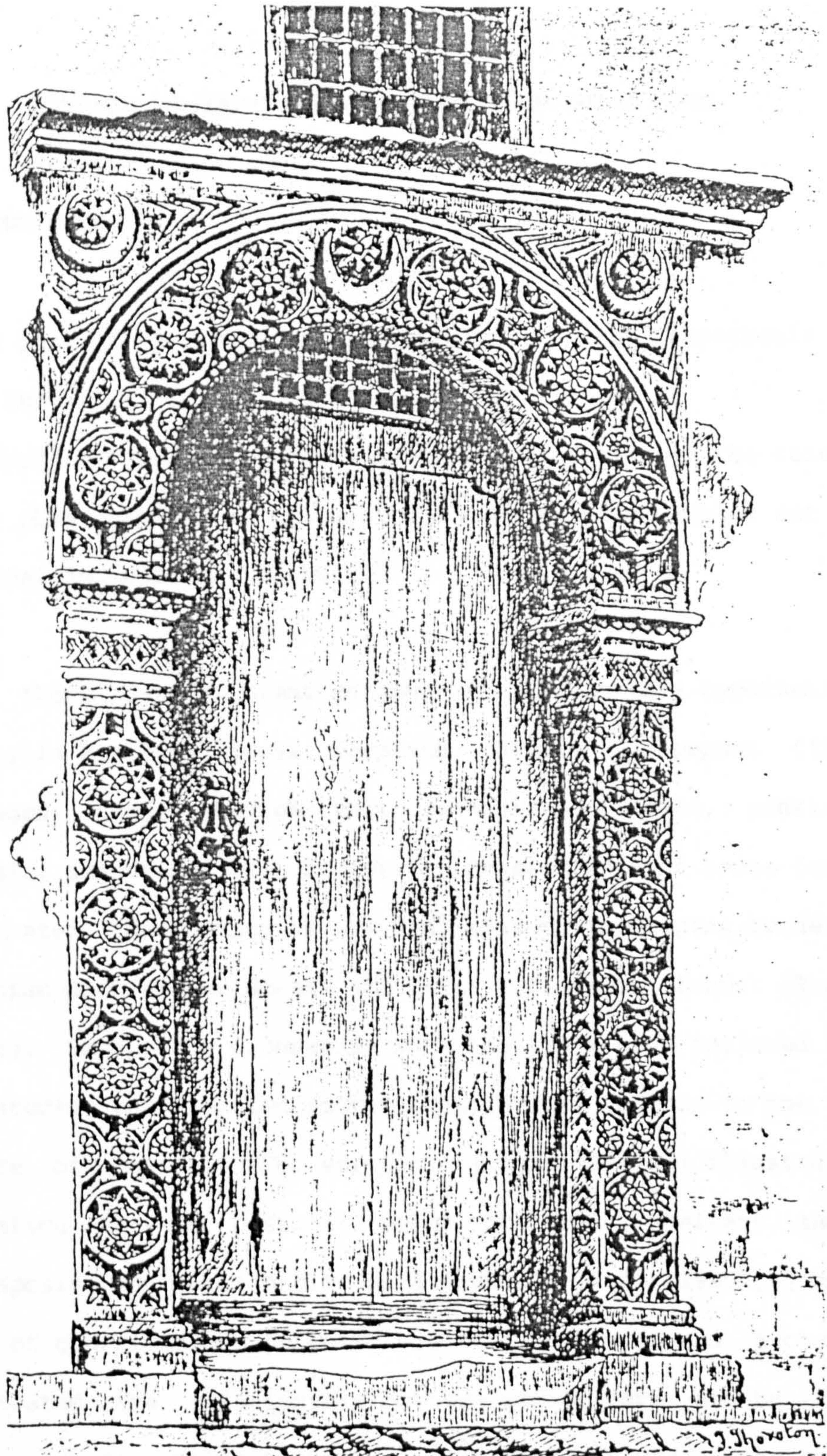
1.
Ravereau, A., was responsible for the 'listing' or classification of the M' Zab. He later created l' Atelier du M' Zab. In 1962, he presented the first 'PUD' (Plan D' Urbanisme directeur) of the valley. Among his writings is his book : "Le M'Zab, une leçon d'architecture." Sindbad, Paris, 1981. See also, Roche, M. "Le M'Zab: Architecture Ibadite en Algerie." Arthaud, Paris, 1970.
2. Brolin, B. "The failure of Modern Architecture." London, Studio Vista, 1976.
3. Boudon, P. "Pessac de Le Corbusier." Dunod, Paris, 1969.
4. Michelson, W. "Urban sociology as an aid to urban physical development: some research strategies." The American Institute of Planners, Journal 34, 1968. pp.105-108.
Oliver, P.(ed.). "Shelter, sign and symbol." Barrie and Jenkins, London, 1975.
Altman, I., and Chemers, M. 'Cultural aspects of environment behaviour relationships." In Triandis, H. and Brishu, R.(eds.). "Handbook of cross-cultural psychology." Vol.IV. New-York: Allyn and Bacon, 1980.
5. Rapoport, A. "House form and culture." Englewood Cliffs, NJ.: Prentice-Hall, 1969.
6. Rapoport, A. "Human aspects of urban form." Pergamon Press, New York, 1977.
7. Lawrence, R. "Housing, dwellings and homes: design theory, research and practice". Wiley, 1987.
8. There is a quite extensive research on the impact of climate, economics, building materials and techniques and the like, on the built environment. This study does not undermine them, on the contrary they are all seen as necessary and complementary to one another.
9. Altman, I. "The environment and social behaviour: privacy, personal space, territory, crowding." Monterey, CA.: Brooks/Cole Publishing Co., 1975.
King, A.(ed.). "Buildings and society: essays on the social development of the built environment." Routledge and Kegan Paul, London, 1980.
Lang, J., Burnette, G., Moleski, W., and Nachon, D.(eds.).

"Designing for human behaviour." Strongsburch, Pa. Dowden, Hutchinson and Ross, 1974.
Rapoport,A.(ed.) "The mutual interaction of people with their built environment." Mouton, the Hague, 1976.

PART ONE

The main objective of this part of the study is to demonstrate the function of cultural and social variables in helping to determine the shape and design of the house/settlement system. And hence support the 'case for a cultural basis for design'. However, by stressing the socio-cultural aspects, this study does not argue for the exclusivity of their action and does not deny the value of other variables. In fact, this study denies physical and/or economic determinism, and although it stresses the socio-cultural forces, it does not believe in any single causal action and does not intend to substitute a form of cultural determinism.

CHAPTER TWO



ALGIERS: DOORWAY IN THE RUE KLEBER

CHAPTER TWO

IMPACT OF SOCIO-CULTURAL FORCES ON BUILT FORM

2.1 INTRODUCTION

This part of the study deals with the first hypothesis which states that :

"house form and settlement patterns are not simply the result of physical forces, but also the outcome of a complex set of social and cultural factors."

Today, there is sufficient evidence to support this hypothesis; for example, in his book 'house, form and culture', Rapoport (1969)[1] challenged those studies that emphasized climate, construction materials, and/or economic factors as determinants of house form, and demonstrated the primacy of cultural systems in helping to determine the design and form of houses and later of urban forms (Rapoport, 1977)[2]. Rapoport's pioneering work has since been followed by many other studies that related cultural and social factors to the design and use of houses. For example, Banham (1973)[3] illustrated the association between possible forms of human shelters and the 'predisposing cultural habits of a people'. King (1980)[4] edited a number of contributions on buildings and society and successfully demonstrated the relationship between social forms and built forms. In a more recent contribution, Lawrence (1987) presented a

comparative study of certain cultural, social and architectural factors related to the design and use of houses, and concluded that:

"houses are the material expression of a matrix of cultural and social variables [5]."

In this study, the Islamic socio-cultural framework is used to account for the similarities between Islamic cities around the world. It seeks to show how strong religious beliefs, attitudes towards social control and other values, in addition to the similarity of some physical aspects such as climatic conditions, led to the familiar "beehive" urban characteristic of the Islamic city.

The focus on the cultural variables does not, however, deny the importance of physical, economical and/or political variables. Indeed, this study acknowledges the contribution of such factors; what it argues with is the 'causal interpretation' of the design and shape of the built environment which consider only these factors. For example, it has been quite common for researchers to relate the design and development of house forms and settlement patterns to one or several factors of a physical kind, such as the availability of materials, or the topographical and climatic context. However, while these factors can facilitate and make possible or impossible certain decisions, they can not decide or impose form. As Rapoport (1969) writes :

"Given a certain climate, the availability of certain materials and the constraints and capabilities of a given

level of technology, what finally decides the form of a dwelling and moulds the spaces and the relationships, is the vision that people have of the ideal life [6]."

Indeed, the large variety of forms by itself shows that it is not just climate, site or materials that decide the shape of our habitat. Social and cultural forces, including religious beliefs, social organisation and interaction play an important role in the choice among varied existing possibilities, and affect greatly the shaping of man's built environment. Of course, the more severe climatic, economical, material and/or technological constraints become, the less are the non-material aspects open to freedom of choice. In no case, however, are they completely without influence.

In this part of the study, an attempt is made to illustrate the important role that social and cultural forces assume in the design of the built environment and particularly in that of the residential one. It first starts by conceptualising culture, then, the impact of religious beliefs, attitudes towards social control and privacy including women's social status, kinship and organisation, and finally economic values, on the house settlement system is respectively demonstrated and illustrated.

2.2 CONCEPTUALISATION OF CULTURE

Culture is a concept which is far from easy to define. In 1952, Kroeber and Kluckhohn [7] produced a sizeable book reviewing definitions of culture and since then the flow of definitions and conceptualisations has increased [8]. An updated version of the book including these more recent attempts would be significantly larger. It is not the intention of this study to review this large literature nor to get involved in the heated discussions about this concept. However, because culture is not usually part of the designer's vocabulary, some clarification is necessary.

Culture according to the dictionary of modern sociology is:

"the total generally organised way of life, including values, norms, institutions and artefacts, that is unique to given people and that is passed on from generations to generations by learning alone [9]."

Rapoport (1977) defined culture as being about

"a group of people who have a set of values and beliefs which are learned and transmitted, which create a system of rules and habits, and leads to a lifestyle [10]."

These are only two of the definitions of culture which abound. They were specifically selected because they are the nearest definitions to the concept of culture as used in this study. Indeed,

for the purpose of this study, culture is seen as being made up of the activities of a group of human beings who share certain values, beliefs and ideals constituting what might be called the non-material components of culture, and artefacts representing the material ones; these different components are transmitted from generation to generation by behavioural means (verbal and non-verbal) and through various artefacts including the built environment. Culture is therefore communicable. And contacts between different groups can lead to cross-cultural communications, resulting in groups acquiring some cultural aspects of others. This process commonly called 'acculturation' is very important as it attests the dynamic and active character of culture.

The remainder of this chapter, deals with some of the most important aspects of culture that affect the built environment. The importance given to these aspects depends on the values that culture attaches to them and hence, the influences that these aspects have on the built form vary accordingly. Although these aspects are usually interrelated and overlap, for the sake of clarity this study deals with each of them separately.

2.3 RELIGIOUS BELIEFS

Religion is an essential element in most cultures, especially the pre-industrial ones. This section takes Islam and Islamic values as an example and attempts to analyse the effect of Islamic culture on the formation of urban settlements in the Muslim world. It particularly aims at isolating the effects of Islamic Law (see Appendix II) in order to account for the similarities in the design process of most traditional Muslim cities. Indeed, Islamic culture seems to have stamped cities and towns of the Islamic world with some characteristics which made them unique and virtually distinguished them from other cities and towns.

These urban settlements were mainly characterised by their introversion, their very dense informal cluster arrangement, the tri-fold division of space into private, semi-private, public, and by a clear segregation into male and female spheres. The most common model followed by these cities used the main mosque, the citadel (fort) and the 'souk' (market) as the focal points of the town. Surrounding this centre were the 'khittat' or quarters which were autonomous units and contained local mosques and convenience shops. In this model, routes were evidently designated from the beginning; however, streets as such were not precisely defined and marked. In fact, in most Islamic urban settlements the public ways developed after the residential cells were allocated [11].

2.3.1 Land subdivision and the origin of the cellular character of the Islamic city

Differently from other planning systems, planning in early Islamic society began with ceding urban space to tribes, army detachments, or individuals; (I am, of course, speaking here about the newly founded cities in areas taken by treaty or conquest, or about the newer portions of existing cities similarly coming under the jurisdiction of a governor [12]). This process was started by the prophet himself in Medina, where he granted the 'khittat' for the different tribes and the 'dur' (houses) for individuals [13].

The origin of this model, (the khittat system) can be found in the territorial conceptions of Arab tribes, where each tribe knew more or less its own territories. These territories were usually collectively owned by the tribe and were used according to the needs of the tribe's members [14]. The laying out of Baghdad and Samarra shows that this process continued to be in use during the eighth and ninth centuries A.D [15].

The sub-division of the land within the 'khittat' or grants was left to the discretion of the quarter's inhabitants. This does not mean, however, that there were no rules at all on how to proceed in regard to the internal spatial organisation of the 'khittat'. Land sub-division within the 'khittat' seems to have also been affected by this conception of tribal territories. Since the 'khittah' (singular

of khittat) was looked at as collectively owned by the members of the tribes, individual members could appropriate land and use it according to their needs. Members of the tribe who came later did have the right to settle in the 'khittah' if there was available space. However, within the 'khittah', once a member of the tribe built on a piece of land, this latter became his own property. Therefore, land sub-division within the 'khittat' appears to have developed according to needs. This can be seen in Al-suyuti's account (577 A.D) of Al-Fustat where he reports that when reinforcements arrived and people became numerous, each party made room for its relatives until the building so increased that the 'khittah' closed in on itself [16].

Islamic jurisprudence was an important factor in regard to the process of transformation within these quarters and to the sub-division of 'dur'. Two notions within the law appear to have played a major role in this process : The 'Shuf-ah' or pre-emption and the inheritance laws.

2.3.1.1 'Shuf-ah' or Pre-emption

The development within Islamic jurisprudence of the system of 'shuf-ah' (pre-emption) which gives a preferential right for a neighbour to buy his neighbour's home or land if the latter decides to sell, has helped the quarters within the city to preserve their own character. Using this system, the members of a 'khittah' can

deny access to the quarter to any outsider.

2.3.1.2 Inheritance laws

The second factor which seems to have played a major role in land sub-division is the partition of 'dur' according to the rules of inheritance. Inheritance law and its applications in Islam may explain a great deal about the structure and process of transformation of land and property within the city. The 'fiqh' (jurisprudence) books introduce many hypothetical cases regarding this subject. These cases deal with what can be divided and with the question of access when a large house has been partitioned. The general opinion was that any property, either land or building, inherited by a group must be divided among them, should any of them demand it, Malik(d.795 AD) argued:

"The bath-house, the cistern, the house, the piece of land or the small shop in the market, are all to be divided (among the inheritors)... even if the share of each one cannot be used [17]."

On this he invoked the Qur'anic verse (Q, vi, 7) :

"From what is left by parent and those nearest related there is a share for men and a share for women, whether the property be small or large - a determinate share - [18]"

2.3.2 The large variety of partial property rights and the ensuing infinite divisions of space

Another aspect of Islamic Law which helped to generate the unique character of the Islamic city is the variety of ownership forms. Islamic law recognizes a large number of partial property rights. Physically, it permits a finer sub-division of spatial rights : rights to a single floor, a room, and even air rights. Functionally, it recognizes a variety of different kind of rights : rights to the 'usufruct', rights during one's lifetime which is then passed to the others, rights to use but not sell a property , and finally the 'waqf' property.

2.3.2.3 The 'Waqf' and the perpetuity of property

An important and interesting phenomenon in Islamic cities is that of real-estate perpetuity which was made possible by Islamic laws of 'Waqf'. The 'Waqf' is a type of a trust and a form of charitable endowment. It is called 'habous' in North-Africa. It includes land and buildings both commercial and residential. The concept of 'Waqf' originates from the teachings and sayings of the Prophet:

"The work and good deeds of a believer that continue after his death are : disseminated knowledge, leaving a good son or a Qur'an for inheritance, a mosque which he built or a house for travellers, opening a stream, or any charity created from his wealth and which continues after death [19]."

'Waqf' capital is given to God in perpetuity, and can never be repossessed, alienated or sub-divided among the donor's heirs. The revenues from the trust provide first for the charitable purposes for which it was established; then the balance is distributed among the benefactor's relatives and the administrator of the 'Waqf'. The administration of the 'Waqf' usually comes under religious institutions. The 'Waqf' has had a strong impact on Islamic city development. While it has helped to protect and preserve areas and monuments of historical significance, it has also presented constraints and obstacles to the redevelopment of some areas; thus influencing heavily the shaping of the physical environment.

2.3.3 Islam's prescription against life imitation and its impact on aesthetics in architectural and urban design

A significant trait of the early house which affected the urban scene is its very simple facade and bare walls with minimum decoration, except for the lattice-work 'mashrabiya' in houses of the later period. Wiet (1964) argues that the bareness of the walls is due to the narrowness of the streets :

"If private houses did not have rich facades, it was merely because they were useless in view of the narrowness of the streets. It would have been impossible to back away far enough to enjoy them [20]."

This statement is quite true but by no means the most important. Islamic ideology which is hostile to any symbol of pride and arrogance and which encourages modesty greatly influenced the form and aspect of the Arab-Muslim urban settlements. Qur-an's prescriptions against life imitation led to the overall absence of figurative decoration in ornamental work and to the development of highly sophisticated abstract and geometric decorative motives.

The erection of statues and other memorials in public places and indeed in any place is also forbidden. Public fountains, usually donated in the name of God by the wealthy, are the only decorative elements that furnish the streets of the traditional Islamic city. The existence of such a large number of fountains can also be explained by their ritual use in the performance of ablutions dictated by Islam's strict regulations of purification.

2.3.4 The 'Qibla' and its impact on the spatial organisation of the traditional Islamic city

The 'Qibla' is the direction to which all Muslims turn for prayers. It indicates the Holy 'Kaaba' towards which faithful Muslims are asked to turn five times a day for their prayers. The 'Kaaba' or 'Holy Mosque' is situated in Mekkah (Saudi-Arabia), the spiritual heart of the Muslim World.

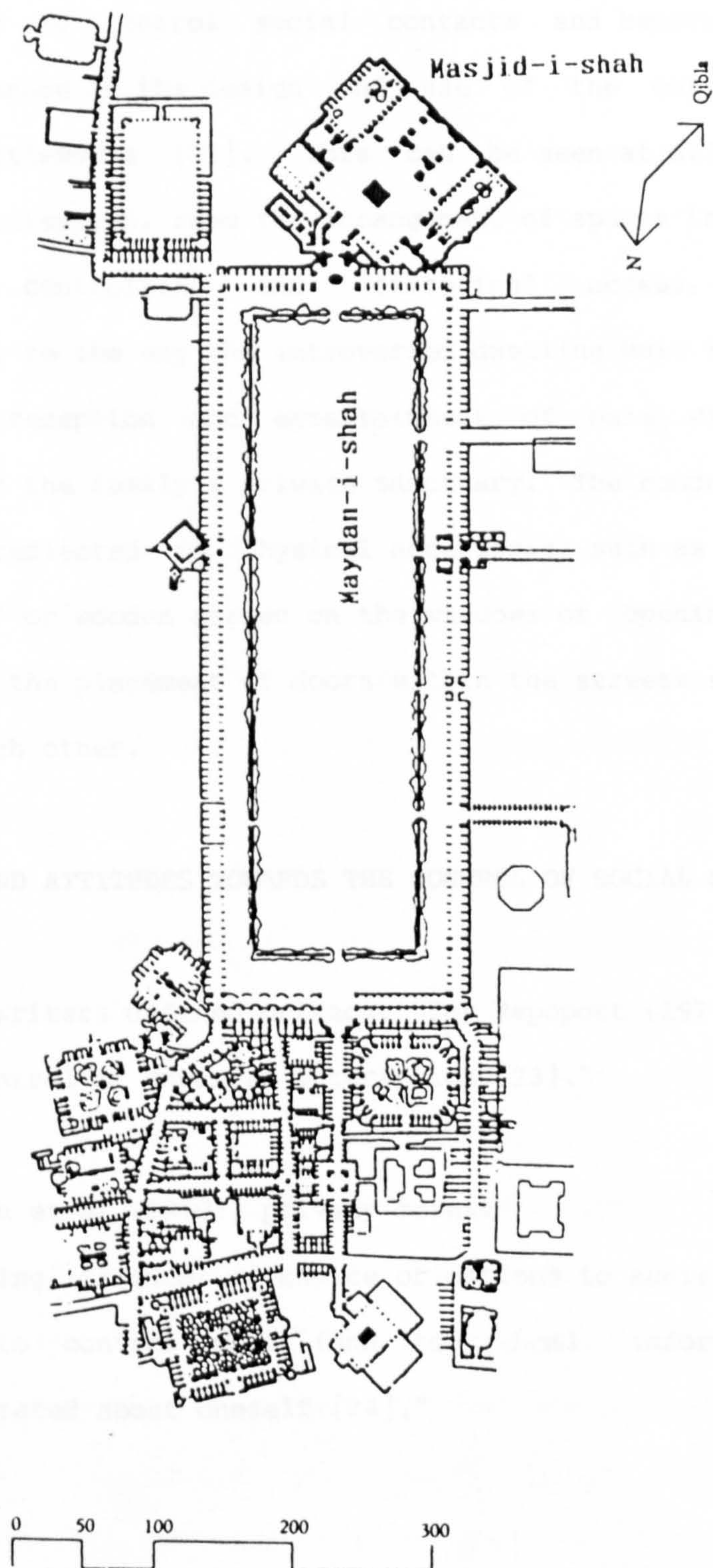
It is towards the 'Kaaba' that the 'Mihrab' or Qibla wall of all the mosques and other structures containing a praying area is orientated. The Qibla direction should be accurately implemented whenever possible. Isfahan in Iran offers a good example of the impact of the Qibla wall orientation on the urban plan and its form. Figure(2.1) representing one of the predominant mosques in that city, shows how the Masjid-i-shah was turned away from the formal axis of the Maydan-i-shah, creating an architectural challenge. the Qibla has also implications on the location and design of some elements inside the building. The saying of the Prophet :

"Do not face the Qibla when you defecate or urinate [21]."

has a strong impact on the orientation of the toilets. In the same manner, the fact that faithful Muslims should not sleep with their feet towards the Qibla has implications on the design of the sleeping area.

Another important factor which had a great impact on the macro as well as the micro-environments in the Muslim World is the concern for the family privacy and specially that of women who should be protected from the eyes of male strangers.

Fig(2.1): The impact of the 'Quibla' on the orientation of Islamic urban plans.



2.3.5 Sexual segregation and its influence on the built environment

The need to control social contacts and behaviour had a very strong influence on the design and use of the early traditional Islamic settlements [22]. This can be seen at all levels of the spatial organisation, from the arrangement of spaces in a hierarchy based on controlling and 'filtering' access, mobility and interaction, to the way the introverted dwelling unit is divided to allow the reception and entertainment of male visitors without intruding on the family's private sanctuary. The concern for privacy was also reflected in physical accessories such as the use of the 'mashrabyah' or wooden screen on the windows or openings when they existed and the placement of doors within the streets so as not to be opposite each other.

2.4 PRIVACY AND ATTITUDES TOWARDS THE CONTROL OF SOCIAL CONTACT

Several writers defined privacy. For Rapoport (1977), privacy is:
"the control of unwanted interaction.[23]."

For Ittelson et al (1970), privacy means:

"obtaining freedom of choice or options to achieve goals in order to control what (and to whom) information is communicated about oneself [24]."

Altman (1976) defines it as being,

"a selective control of access to self or one's group [25]."

These definitions emphasise the control, choice and dynamic aspects of privacy. However, while privacy is often referred to as the individual choice of aloneness, it is an interactional concept where both parties agree that there will be non-interaction and that one of them is to be alone [26]. Nevertheless, privacy serves several functions. For example, it increases freedom of choice and enables individuals or groups to have control over their activities [27]; it provides for personal autonomy and limits and protects communications [28]; it regulates the relationship between a person or a group and the social world [29]. These functions and others indicate the importance of privacy for psychological, social and physical well-being.

However, if privacy is a need felt by most creatures, different cultural values have led to variations in the meaning and interpretation of the concept as well as the stress on different means to realise it [30]. Despite the fact that Altman (1977) [31] and others have challenged generalizations concerning the concept of privacy, many decisions about the design and use of the built environment are still made as if the implications of privacy are unequivocal and can be prescribed. In contrast to design patterns or studies that make broad generalizations about privacy needs, this section aims to show that this process involves different

'culture-specific' mechanisms and that a precise understanding of these mechanisms is necessary to define and regulate privacy in specific contexts at specific points in time.

2.4.1 Different conceptions of privacy between different cultures

Cultural customs and norms play an important role in the definition and regulation of privacy. However, although privacy is a process that exists in all cultures, its definition, meaning and the way it is achieved vary from culture to culture. Rapoport (1969), for example, argues that privacy is affected by the position of the woman:

"Since privacy is at least partly affected by the position of the woman, we would expect to find considerable variations in the definition of privacy, how it is achieved, and which are the important considerations [32]."

Indeed, because of differences in women's status, for instance in Non-Muslim and Muslim societies, the definition of privacy and the mechanisms used to achieve it are different. In Islamic societies where maximum segregation between male and female is required outside the kin group, and where religious values encourage women's modesty, the main purpose of privacy is to control social interaction between males and females and, especially to protect and isolate women from male outsiders. In fact, in Arabic the word 'haram', which means privacy, is also used as a synonymous of woman.

On the contrary, in European societies, where there is a free interaction between the sexes, and where women's and men's roles and social positions are fairly similar, privacy does not particularly evolve around that of women. Several empirical studies in the United States of America have found four main components of privacy that form a core of meaning including: 'controlling access to information', 'being alone', 'no-one bothering me' and 'controlling access to spaces' [33]. Hence, although privacy is pervasive to most cultures, and in general refers to separation from others through control over access, space or information, different values can lead to variations in its meaning and interpretation as well as the stress on different means to realise it.

The difference in the meaning of privacy between Hindu and Islamic societies is another example that shows how important it is to avoid generalisations, and assumptions about privacy needs. Indeed, although both Hinduism and Islam encourage sex segregation, which would suggest the same meaning of privacy, there are differences in the interpretation of privacy and the means by which it is achieved in the two societies. In effect, while the Hindu woman is not allowed to interact and socialise with her husband's relatives, especially her father-in-law, which means that it is within the private space, namely the dwelling itself, that privacy is most needed, for the Muslim woman maximum segregation between the sexes is stressed only outside the kin group. Therefore, privacy is achieved by a strict separation between private and public areas [34].

2.4.2 Privacy regulation

The mechanisms used to control social mobility and avoid social contact are varied and differ from one culture to another. In general, Rapoport (1980) identified six main mechanisms used to avoid unwanted interaction. These are: [35]

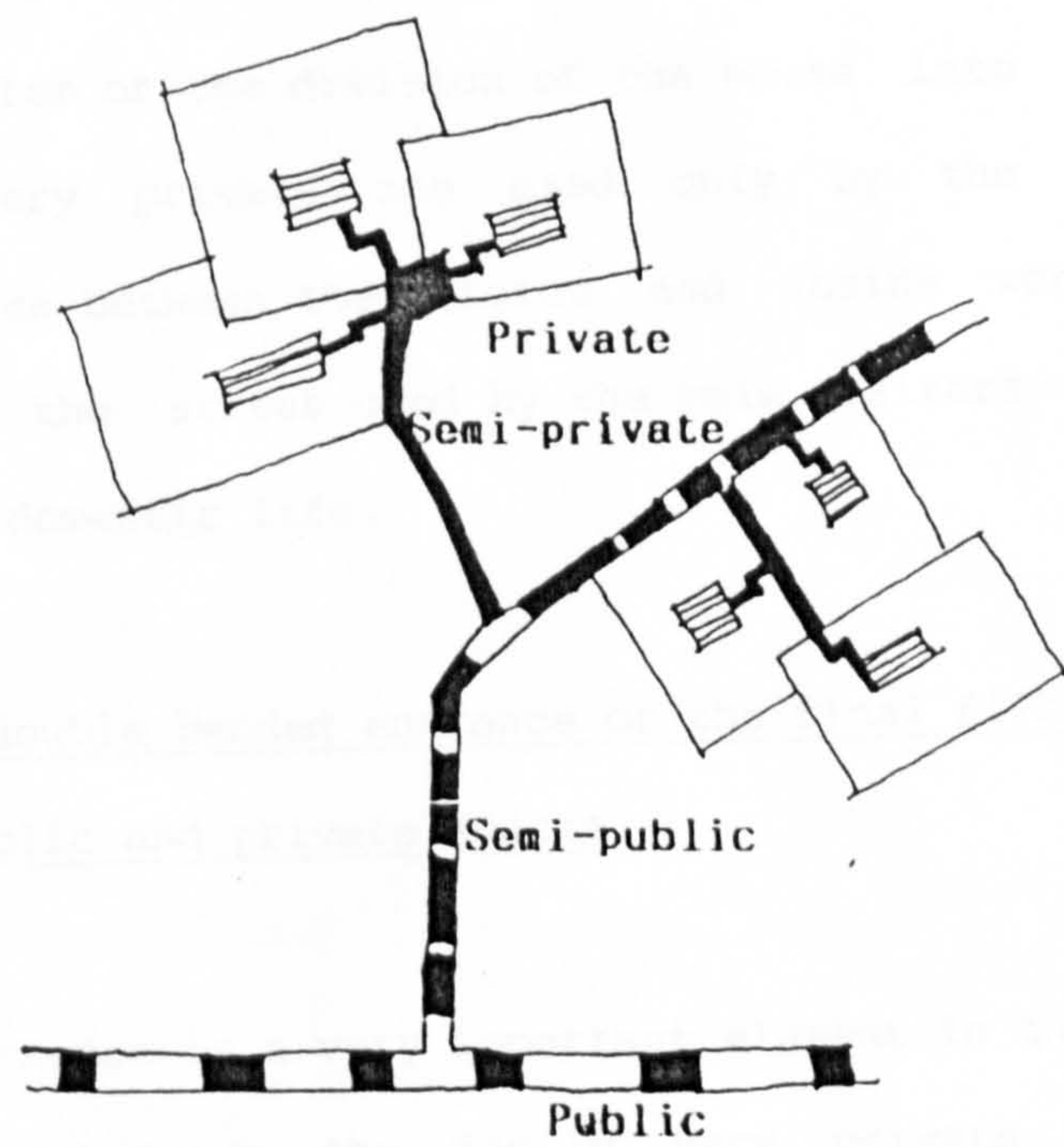
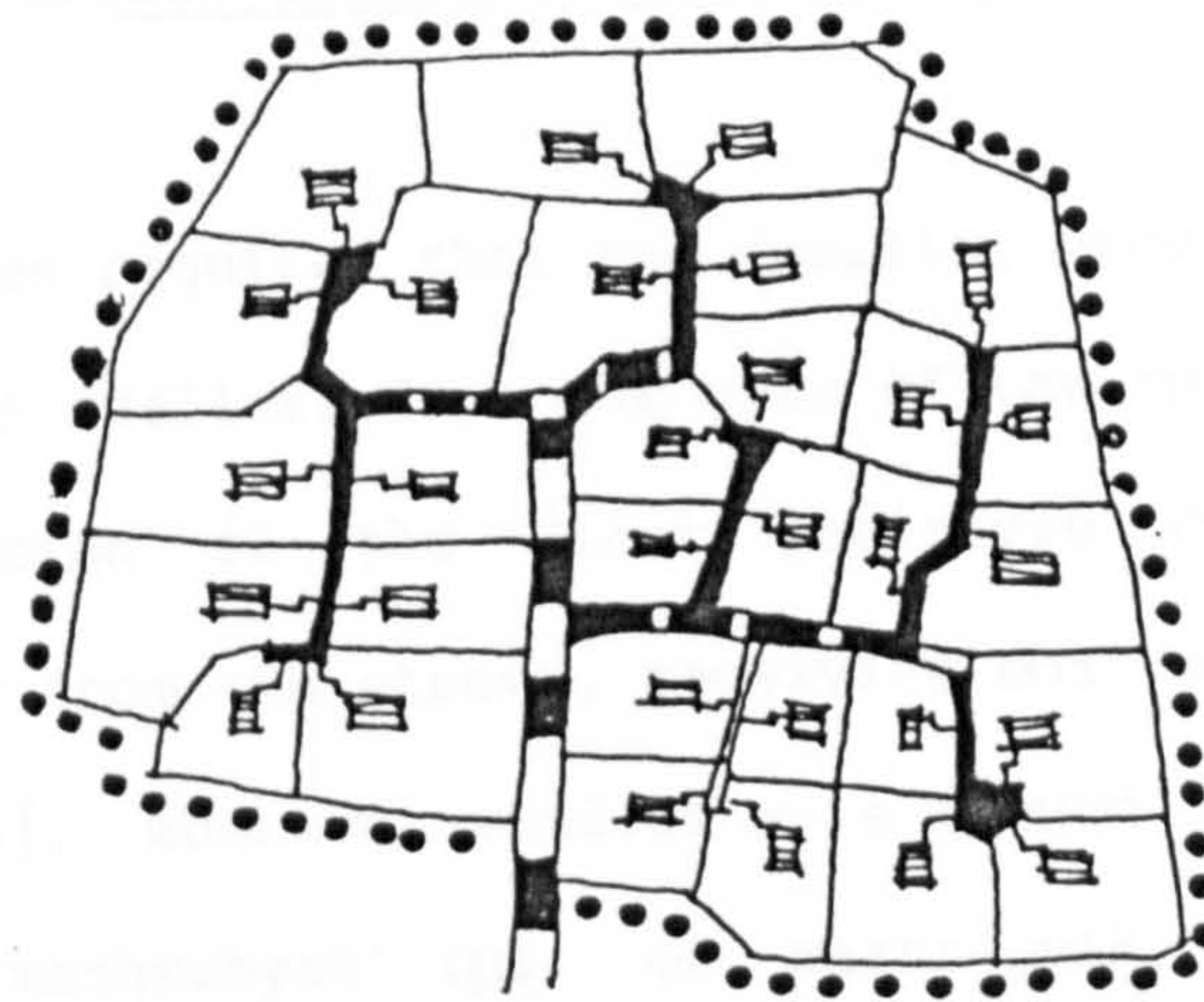
- Rules (manners, avoidance, hierarchies ...)
- Psychological means (internal withdrawal)
- Behavioural cues
- Structuring activities in time (so that particular individuals and groups do not meet)
- Spatial separation
- Physical devices (halls, courts, doors, curtains ...)

These mechanisms can be used together or separately, depending on the situation. However, in general, most societies rely on environmental mechanisms to achieve the desired level of privacy. A study of extant traditional urban settlements would show the existence of many devices whose primary role is to control social contact and interaction. For example, an examination of the traditional Arabic-Islamic urban pattern shows that the concern for privacy is reflected in the physical form of the city in several ways. Among these are the trifold division of space into private, semi-private and public, the large number of blind alleys and culs-de-sac, the introverted residential unit with its separate guest-room, the location of thresholds and the position of doors within the streets.






2.4.2.1 Circulation pattern as a social control mechanism

In Islam maximum segregation between the sexes is required outside the kin group (i.e , vis-a-vis strangers). This has led to the creation of semi-private space, a protected area outside the dwelling unit itself within which kin-like responsibilities govern. This extra 'filter' created a relatively unusual circulation system characterised by a clear hierarchical spatial organisation. One or more thoroughfares, according to the city's size, usually cross the city from one gate to the other passing by its centre. Along these main public arteries or in easy connection with them are the main urban elements (the mosque, the market and other public facilities). Several streets open onto the main thoroughfares with each one serving one quarter. No dwelling opens into these streets which usually contain shops and/or workshops. A third kind of street or more exactly of interior path, consisting mainly of blind alleys and culs-de-sac, allow access to the individual dwellings. This access is not direct as the dwellings do not usually open directly onto those alleys; a double bended space which works as the final 'filter' allows the male guests of the family to access to the house without intruding into the family's privacy (fig 2.2).

Fig(2.2): Hierarchical spatial organisation of the Islamic city.



KEY

-  Charaa
-  Tahawelt
-  Driba
-  Skiffa
-  Ouesteddar

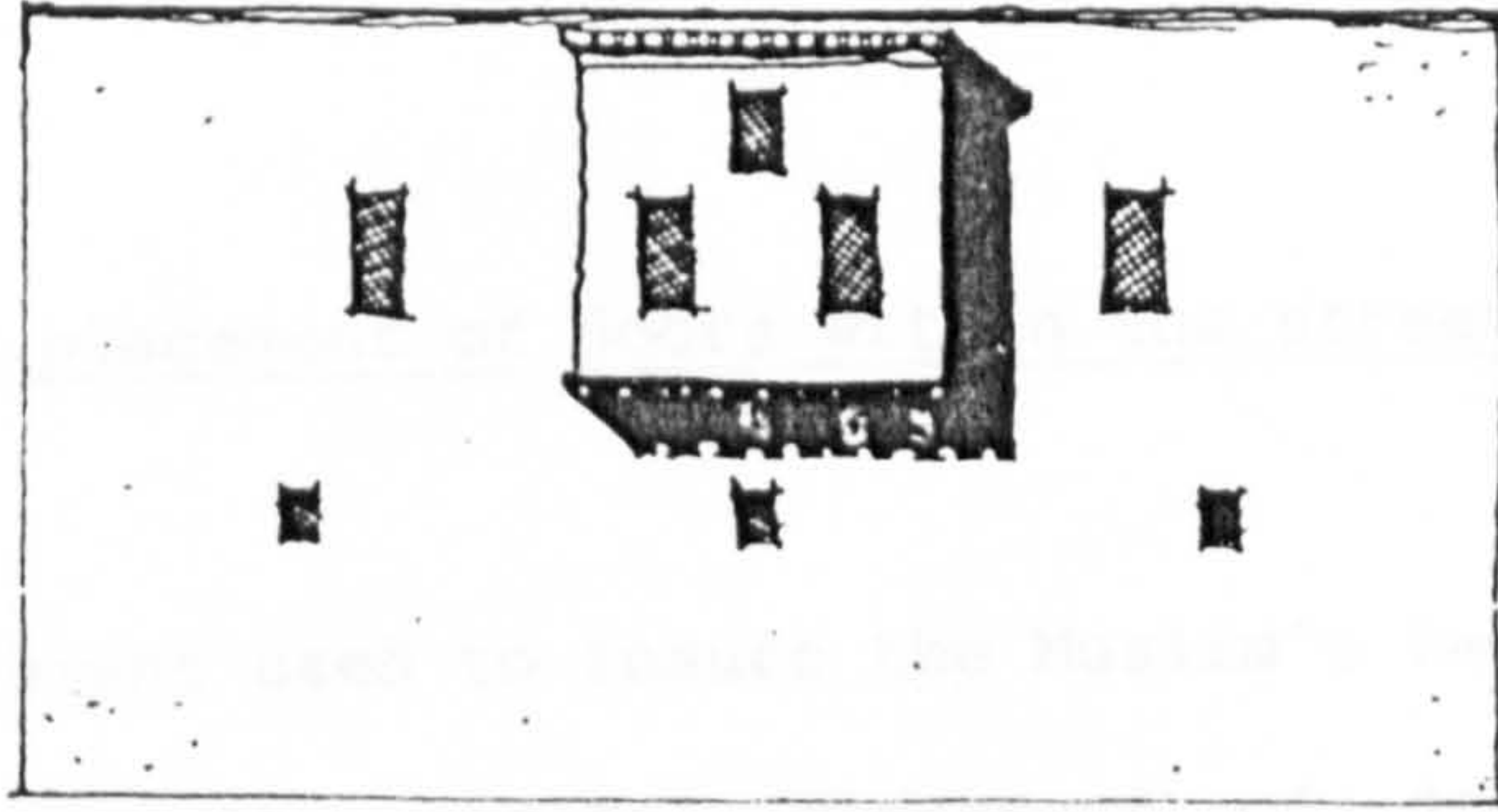
2.4.2.2 Introversion as a mean of achieving privacy

Islamic values required that the dwelling provides maximum privacy and protects its dwellers from the eyes of the outsiders. This led to the adaptation of the Greek peristyle court house which was orientated away from the street, receiving most of the light from the inner court [36]. Wherever windows were opened in the outside walls, trellisses or 'mashrabyat' (pl. of mashrabyah) were projected on them. These 'mashrabyat' served to satisfy the curiosity of those who were indoors and at the same time protected them from the indiscretion of those outside (fig 2.3). The development of a double circulation system or the division of the house into two different spaces - a very private one used only by the family and an intermediate area between the outside and inside world accessible directly from the street used by the male visitors - achieves full privacy in the domestic life.

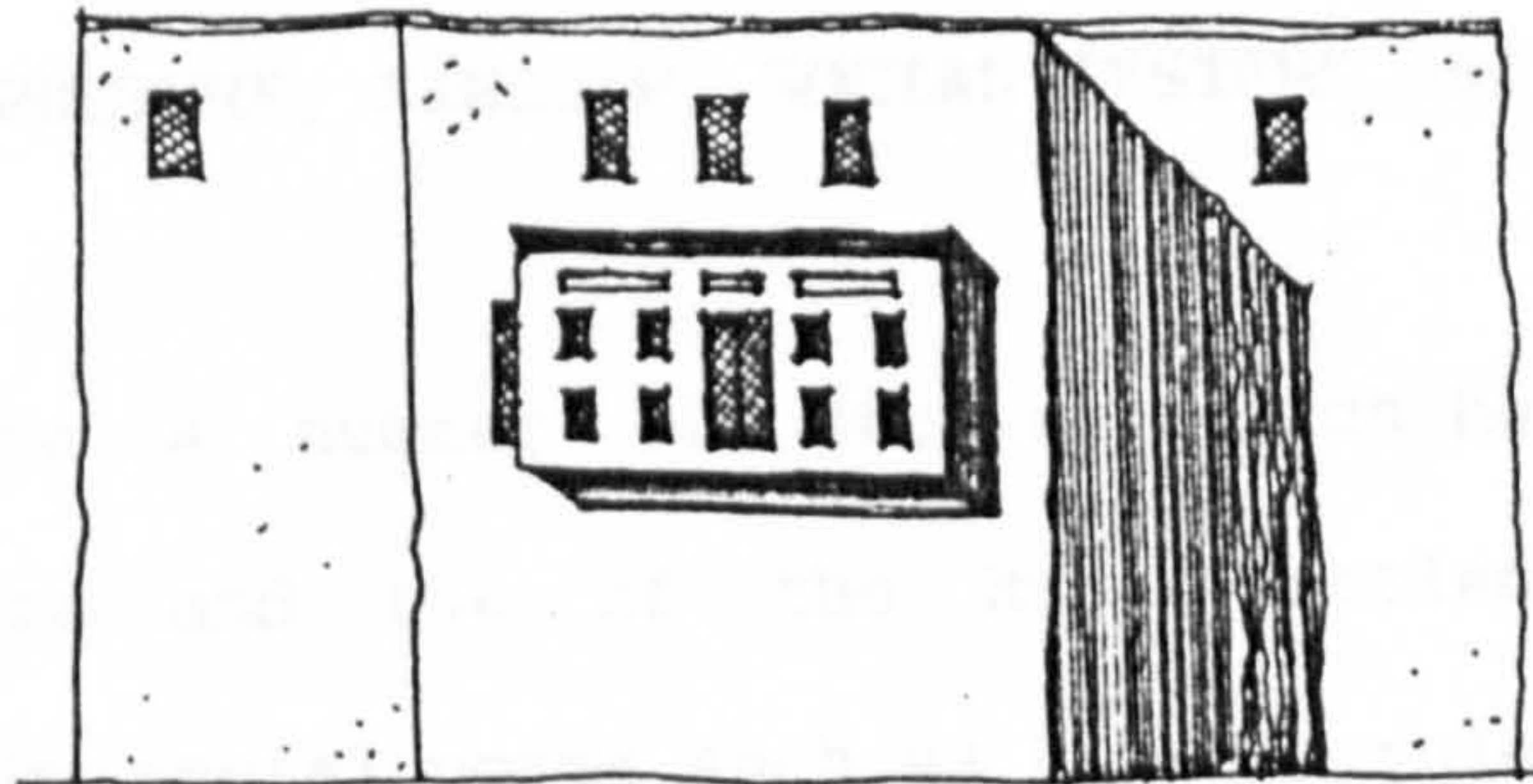
2.4.2.3 The double bended entrance or the final filter between public and private spaces

The main entrance is a very important element in the dwelling. It controls contact between the family very private sanctuary, the intermediate area accessible to male visitors, and the public space. This entrance leads to a sort of hall or lobby designed in such a way as to prevent direct visual contact between the exterior and the

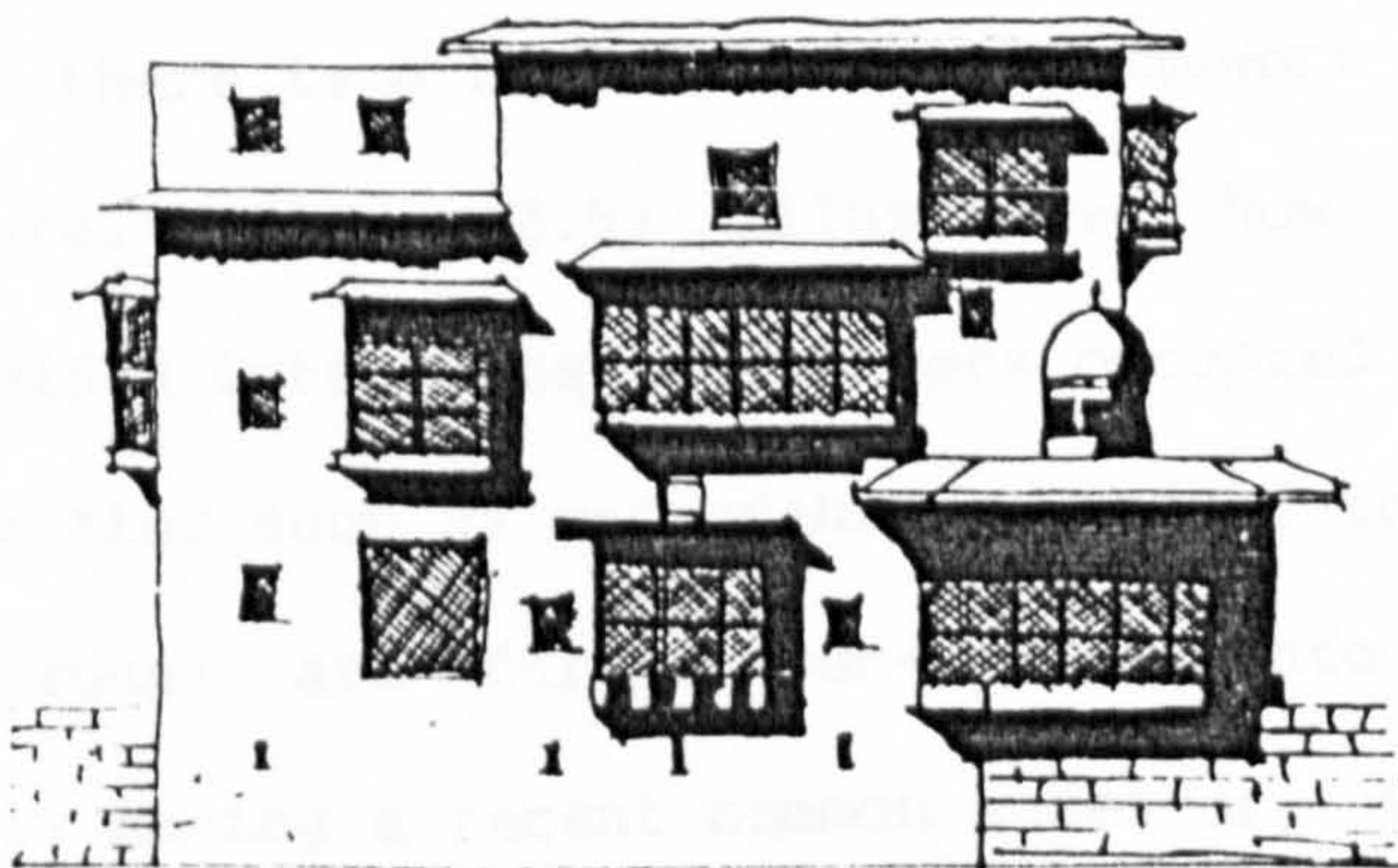
Fig(2.3): The 'Mashrabyah' as a means of providing visual privacy



The mashrabyah satisfies the curiosity of those indoors, but at the same time protects them from the indiscretion of the passersby and even neighbours.



A significant trait of the early Islamic-Arabic house is its very simple facade and bare walls with no figurative decoration. However, the mashrabyah became the most prominent characteristic of the houses of the later period.



courtyard, and to allow direct access to the males' guest room (fig 2.4).

2.4.2.4 The placement of doors within the street

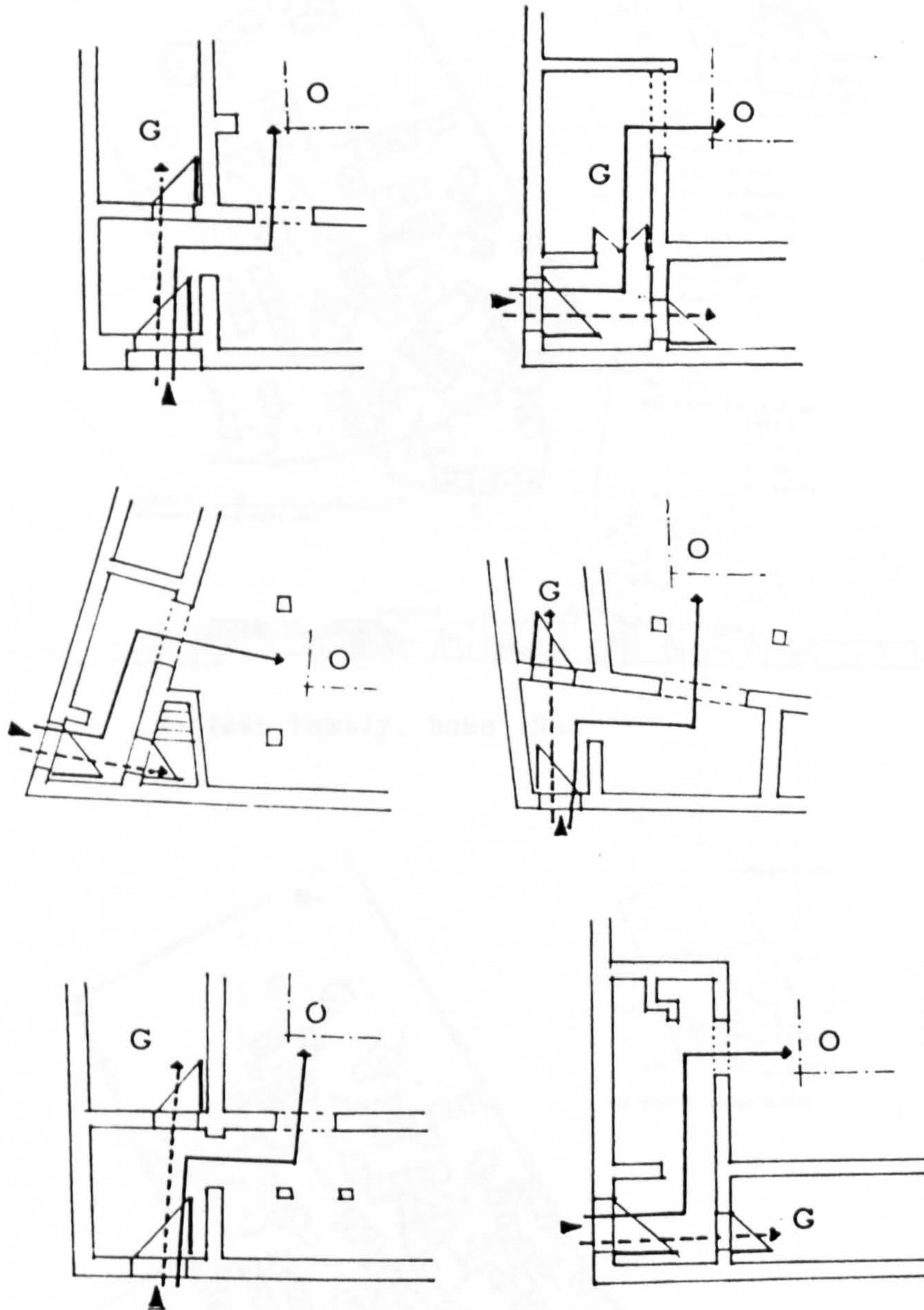
Another element used to insure the Muslim's family's desired level of privacy was the careful placement of doors which were never opposite each other. Placing the doors in front of each other was considered as an intrusion into the privacy of the dwellers.

2.5 FAMILY STRUCTURE, KINSHIP, SOCIAL SYSTEMS AND FORMS

There are a number of studies which have illustrated how the design, shape and use of the house-settlement system has been influenced by social norms such as kinship rules [37].

In his study of the Hausa architecture in Northern Nigeria, Moughtin (1985)[38] shows that within the apparently formless complex of mud dwellings that exists inside the walls of the ancient city of Zaria, there is a basic physical framework which reflects its social structure. Figure(2.5) illustrates how the city is in fact sub-divided into zones or quarters occupied by people sharing certain similarities such as membership in one of the royal families, and how these zones are further sub-divided into smaller areas occupied by families having a recent common ancestor. The basic element within this complex pattern, is the street block, enclosed by a high mud

Fig(2.4): The 'skiffa' or the final filter between public and private space.



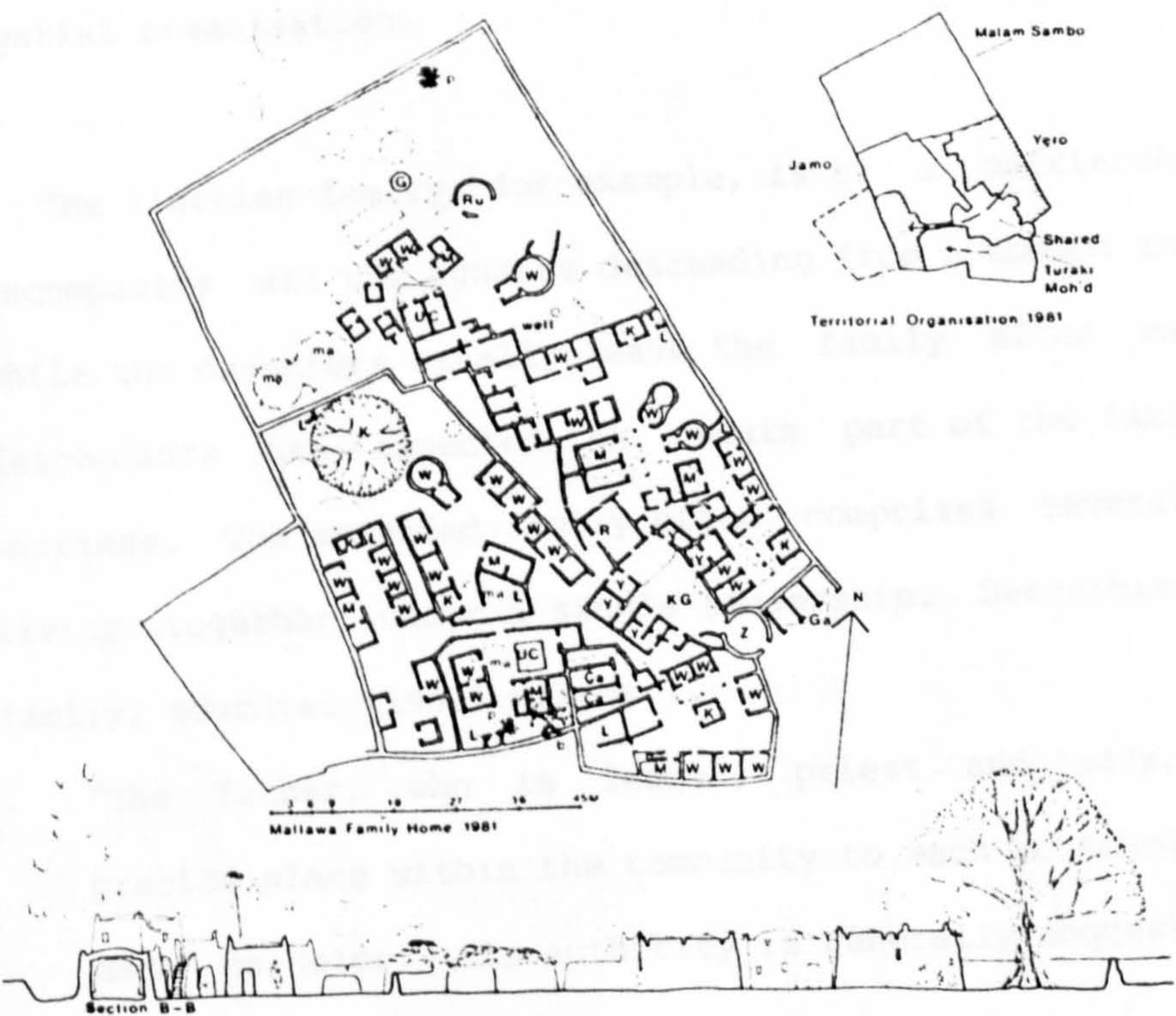
O: Ouesteddar

G: Male guest-room

Fig(2.5): Relationship between family structure and the house-form
(source : Moughtin 1985)



Mallawa family, home 1962



Mallawa family, 1981

wall and occupied by the extended family. This pattern is actually characteristic of most traditional Islamic cities where social links and the various social entities, from the extended family to the tribes, are all reflected in the spatial organisation. In fact, in the newly founded early Islamic cities, land sub-division itself was based on the granting of urban space to tribes or groups related by common origin, with each group having its own quarter (see paragraph 2.1.1).

2.5.1 Family structure and house form

The family is the fundamental social cell of any social structure. There are, however, great differences in family structure [39]. It is usually this difference in structure that has an impact on the spatial organisation.

The Algerian family, for example, is of a patriarchal type; it encompasses all the agnates descending from a common ancestor. And, while the daughters usually leave the family after marriage, male descendants are expected to remain part of the family even after marriage. The extended family often comprises several generations living together under a single leadership. Describing the Algerian family, Bourdieu (1962) writes :

"The father, who is leader, priest and judge, assigns a precise place within the community to each household and to each bachelor. His authority is generally unquestioned. He

has two greatly feared sanctions at his disposal - the power to disinherit and the power to call down curses - The latter being undoubtedly the most powerful weapon, since it deemed to bring down divine punishment upon the ungrateful, the prodigal or the rebel [40]."

Moughtin (1985) reports the same strong relationship between family structure and house form in northern Nigeria:

"the cyclic and organic nature of the family structure affects house planning in several ways [41]."

He shows how, when a new compound is built, it consists only of a perimeter wall, an entrance hut and huts for the wife and husband. As the family grows, huts are added whenever they become necessary; later, low walls are built to subdivide the compound into quarters for the extended family units. When the family shrinks through death or the loss of a breakaway family group, the tendency is for unused huts to be demolished, the site put to other uses and the building materials recycled (fig 2.5). The extended family organisation is physically reflected in the courtyard cluster, where each room is occupied by a nuclear family. The original house is gradually extended by the buildings of new rooms as the family grows larger in size. Changes in the family structure result in either the sub-division of the house, if it is big enough, between the new compound heads, that is the male inheritors, or the buildings of new cells on a new site.

2.6 ECONOMICS WITHIN A CULTURE SYSTEM -IMPACT OF ECONOMIC AND TECHNOLOGICAL DEVELOPMENT ON SETTLEMENT PATTERNS-

The opening section of this first part of the study presented the concept of culture as notoriously difficult to grasp [42]. It showed also that there was some agreement that culture referred to 'the way of life of a group of people including the economic, political, social and other aspects of life'. The following section of the study examines the assumption that social changes are for a large part economically generated as well as mediated; and attempts to demonstrate the operation of economics within a culture system, and the influence of technological development on communities and their living environment.

2.6.1 Effects of economic changes on urban and rural communities - the growth of the industrial town -

The economic and technological development and the ensuing social change that characterized the mid-eighteenth century, provides a good case study for the impact of economics on communities and their environments. Indeed, from the mid-eighteenth century onwards, the industrial revolution began to change the course of history, first in England and then in the rest of the world.

The first changes started when small farmers were progressively transformed into labourers, with minimum living standards which

forced them to find other sources of income [43]. One alternative was the weaving industry. Weaving had long been organised in the country, in the workers' own homes, where the complete processes of spinning, weaving, dyeing and selling the finished products were carried out by members of the same community. However, the ever-expanding market, and the inability of the traditional familial system to cope with the demand, led to the appearance first of traders, then stimulated a series of technical inventions which completely changed working conditions. As the spinning jenny and flying shuttle revolutionized the existence of every able-bodied member of the family [44].

Later on, in about 1771, when manpower was replaced by mechanical force, and the first water powered factories were erected, families and communities were even more transformed. Former scattered small industries had to concentrate in large workshops near water-courses, where the necessary energy was available, but most factories remained in rural locations [45].

However, soon afterwards, water power was replaced by steam engines, which encouraged the weaving industry to move near coal deposits. The steam engine, in turn, solved the problem of seepage of water in the mines, and revolutionized the extraction techniques. New ways of using coal in forging and rolling were invented and the iron industry moved from wooded areas to those with coal.

The development of these industries and their concentration in large factories near coal areas, drew many families. Tied agricultural workers became wage earners, or industrial workers, and moved to the areas that contained factories. New housing districts were built near these latter to accommodate the ever-increasing number of migrants, leading to the beginning of conurbations [46].

Hence, the distribution of population between rural and urban areas was dramatically reversed. The introduction and rapid growth of the factory system and the ensuing prosperity based on higher wage rates in the industrial towns simultaneously destroyed the existing traditional structures and put the whole urban system under the pressure of massive and persistent immigration from the rural areas. Between the middle of the eighteenth and the end of the nineteenth century, many British settlements were completely transformed. Manchester, for example, grew from a village of 12,000 inhabitants to a town of 95,000 inhabitants. In France, Mulhouse had 10,000 inhabitants in 1812 and 36,000 in 1836 [47]. Meanwhile, the demands of trade such as coal and iron ore, showed the need for good networks of communication. In 1767, the first cast-iron railway-line for carrying coal was built. But it was only after 1825, that the railways really began to develop. During the same period steamships took the place of sailing ships [48]. These new methods of communication revolutionized people's lives. In the advanced countries, the nineteenth century development of long distance transportation by steamships and railroad made it possible for cities

to draw on large regions and grow to populations of a hundred thousand and more.

However, for a period their growth was limited by internal restrictions. Indeed, travel within the city was still by foot which limited the cities to a radius of three miles from the centre [48]. And, as electric elevators were not yet available, building was also limited in vertical expansion which led to a fantastic rise in land values and to maximum exploitation of every available space, resulting in a concentration of trade, factories and residences.

This was only a transitory phase in the growth of the city. Towards the end of the nineteenth and early in the twentieth century, with the invention of powered elevators, tramways, buses and cars, the city burst its eggshell. Those who could afford it moved their homes to the suburbs, far from the highly congested and polluted urban centres. Indeed, with the expansion of suburban transport facilities, together with higher wages for many categories of workers, it became increasingly possible for workers to live at some distance from their place of work.

Railway development in some areas greatly influenced the pattern of residence and occupation. In Newcastle Upon Tyne (England), for example, improved rail links between the city centre and the coast in the 1860's and 1880's, not only led to the growth of Tynemouth and Whitley Bay as pleasure resorts but also enabled these and other

places in between to develop as dormitory areas for Newcastle and the industrial belt along the Tyne [50].

This process, first seen in Europe and North America, is now happening in all parts of the world. However, while Britain and other developed countries invented the industrial revolution and had over a century to adapt to the social and cultural changes it brought with it, industrialisation and change in twentieth century Algeria and most other developing countries was neither progressive nor inherent to the indigenous cultures. On the contrary most of the tools were imported, and the process involved a rapid development of advanced technology industries. Many communities found themselves changing from a rural economy to an advanced urban economy in the course of a single generation, which created a more immediate confrontation between the old cultural values and new ones. Furthermore, industrialisation in eighteenth and nineteenth century Britain was a progressive change from peasant to capitalist agriculture and low to medium levels of industrial technology, industrial evolution developing alongside rural depopulation as surplus agricultural labour was shed. Conversely in Algeria industrialisation created large scale distress migration among the peasants.

Because of its strategic position between the two main fields of oil and gas of Hassi Messaoud and Hassi Rmel (plate 4.1) the M'Zab and particularly Ghardaia witnessed the development of an important

economic activity, attracting large numbers of workers many of them from rural origin, and offering varied job opportunities to the locals.

2.6.2 Impact of individualized wage remuneration on family and social structures

In the past, most traditional economic systems were based on collective involvement of several members of the same family in the same activity. With the new economic development based on individualised wage remuneration, the importance of the family as a socio-economic entity lost a great deal of its meaning. This resulted in the loosening of social ties, and subsequently, the dispersion of the extended family into nuclear units [51].

In the M'zab, because of the particularly harsh conditions of the area, most young men used to imigrate North or even abroad to sustain their families. With the increase in goods and services produced by industry, and tertiary activities, due to economic expansion, the young men were no longer obliged to emmigrate and are employed by local firms who are even giving job opportunities to the female members of society. This in a way, had quite strong repercussions on family and social organisation in general.

While in the past, the patriarch or head of the extended family was at the same time, 'chairman' and 'manager', receiving money from

his migrant children, and spending it freely among the different members of the extended family, now, that all subheads (heads of the nuclear families) are present, live under the same roof, and use a 'joint extended family account', problems have started to arise threatening the continuity of the extended family. Indeed, the difference of salaries which are independent of age and sex is increasingly challenging the established family structure and hierarchy. The traditional authority of the elders is increasingly undermined, as greater respect is given to younger successful people, and as power is transferred from the father to the son earning the highest salary.

The female members of the extended family who were used to contribute to the family's income by weaving and selling their products to local traders, are now increasingly employed by local firms. In the past there was no selling as such, as most housewives exchanged their products against either raw materials, shoes, copper trays, and other utensils and even jewellery. It was therefore very common for craftsmen or traders to have a series of small workshops, usually wool processing, tailoring, shoemaking, pottery and others, in each neighbourhood, as most women were housebound, and all transactions were made by their children who had sometimes to make several trips for each transaction. Most of these workshops are still operating today, although they are progressively disappearing because of new policies of centralisation and modernisation. Today, more women are becoming financially independent, which means that they

are less dependent on the male members of the family. Furthermore, to pursue career opportunities many women are reducing their family sizes. The spread of modern methods of contraceptions played an important role not only in the change of family size but also in that of the role of women. The demise of the domestic system of production and marketing, removing the role of the family as a production unit, is similar to what happened in 18th century Britain, but the context is different.

Therefore, technological development, industrialisation, and the industrialised wage labour, played an important role in the dispersion of the extended family into nuclear units, and also in the size and organisation of the latter.

2.6.3 Economics and built form

The form and growth of urban environments is the result of numerous economic, social and physical factors operating through many decades. The previous paragraph showed that economics have an important role in the development and growth of urban settlements. However, economic factors alone cannot account for the variability in the design and shaping of the built environment and specially the spatial organisation of the house-settlement system. As Daunton (1983)[52] states:

"Whilst economics might explain the variation in house size and in the level of overcrowding, it cannot account for the

architectural response to economic constraints. Economics might dictate a small size house on Tyneside, but would not necessarily result in the peculiar adoption of the cottage flat."(Daunton, 1983)

Indeed, whilst economics might have a great influence on the density, size, the number of rooms, amenities, kind of materials, furnishing and maintenance, their impact upon the spatial organisation and use of the dwelling is less evident. Enjoying the same economic abilities, an Arab-Muslim and a European client would want different types of house. While the Arab-Muslim would, for example, insist on having a separate male guest-room directly accessible from outside, the European might prefer to have one common space for the kitchen and dining/living room.

Furthermore, many examples show that working with the same economical constraints, designers can come with different architectural responses. All this, however, does not undermine the role of economic development and technological progress in modifying many aspects of domestic architecture. For example, the improvement of sanitary provisions and the availability of domestic appliances led to the transformation of the detached kitchen, washroom and toilet into rooms integrated under the main roof of houses. The increase in car-ownership led to the necessity of adequate access and parking facilities in residential areas and, very often, to the integration of new space : the garage of the house.

Finally, economic development is also having an increasing influence on social interaction. It is transforming the dwelling to a self-sufficient unit which contains not only a battery of domestic appliances but also a whole range of entertainment equipment; hence, challenging the use of public places and confining more and more people indoors.

While entertainment was once a public event, it is now dominated by that singularly private mode of communication, the television. Telephone calls have largely replaced the neighbourly chat and even the traditional promenade has been replaced by the automobile promenade. In fact increasing car ownership has not only led to a reorganisation of work journeys, shopping and leisure habits. It had also very strong spatial implications. Los Angeles, in North America, which is a product of the auto-age has over 70% of its space given over to the car by way of freeways, interchanges, and car parks [53].

2.7 CONCLUSIONS

Socio-cultural factors have an important role in helping to determine the design and shape of the built environment. Religious beliefs, attitudes towards social control and interaction, family and kinship structure have led to certain forms and configurations. To illustrate this, the Islamic cultural framework demonstrates and account for the similarities between the Islamic cities around the

world. It shows how Islamic values led to introversion both at the macro and micro levels of the city, influencing not only spatial organisations and orientations but also urban and architectural aesthetics. Also, this chapter has shown how Islam's prohibitions against imagery and idol led to the absence of figurative decoration in ornamental work and to the development of a new art characterised by abstract and geometric motifs.

By emphasizing the role of social and cultural variables, this study does not, however, deny the role of other variables. The impact of economical variables on the built environment has been recognised. However, while economic and technological change and development have a great influence on many aspects of the environment, as well as attitudes and values (the impact of industrialisation on family and social structure, the development of industrial towns and conurbations, the impact of motor traffic on people's lives and environments cannot be overlooked), they cannot account for the large variety of typologies in the built environment. In fact the large variety of forms by itself shows that it is not just climate, site, materials and/or economics that decide the shape of the built environment, but also people's choices, images and world views. Economic factors function as constraints upon these choices.

The next part of the study takes the 'case for a cultural basis for design' further. By comparing a traditional and a modern settlement it attempts to assess their 'responsiveness' to people's

socio-cultural needs and hence draw conclusions about the best ways to include people's attitudes and aspirations in the design process.

2.8 NOTES AND REFERENCES

1.
Rapoport, A. "House Form and culture." Prentice Hall, Englewood cliffs, NJ., 1969.
2. Rapoport, A. "Human aspects of Urban form: towards a man-environment approach to urban form and design." Pergamon Press, Oxford, 1977.
3. Banham, R. "The architecture of the well-tempered environment." Architectural Press, London, 1973.
4. King, A. (ed.). "Building and society: essays on the social development of the built environment." Routledge and Kegan Paul, London, 1980.
5. Lawrence, R. "Housing, dwellings and homes: design theory, research and practice." Wiley, 1987. p.78.
6. Rapoport, A. 1969. op.cit. p.47.
7. Kroeber, A., and Kluckhohn, C. "Culture: A critical review of concepts and definitions." Cambridge: Harvard University, Vol. XLVII, No.1, 1954. Cited by Hault, T. "Dictionary of Modern Sociology." Littlefield, Adams & Co., New Jersey, 1969. p.93.
8. Agnew, J. et al. "the city in cultural context", Allen and Unwin Ltd, London, 1984.
Bauman, Z.. "Culture as praxis", Routledge and Kegan Paul, London, 1973.
Williams, R.. "Culture and Society: 1780-1950", Routledge and Kegan Paul, London, 1958.
Williams, R.. "The sociology of culture", Schocken Books, New-York, 1982.
9. Hault, T. 1969. op.cit. p.93.
10. Rapoport, A. 1977. op.cit.
11. There is an exhaustive bibliography about the Islamic world, the following authors give a concise image of the Islamic city and its development:
Sauvaget, J. "Esquisse d'une histoire de la ville de Damas." Revue des etudes Islamiques, VIII, no.4. Paris, 1934. p.421-480.
Marcais, G. "L'urbanisme musulman." Cinquieme congres de la federation des societes savantes de l'Afrique du Nord. Alger, 1940. pp.13-34. Also, "La conception des villes dans l'Islam."

La Revue d'Alger, Vol.II, 1945. pp.517-533.

Grunebaum, G. "Islam: Essays in the nature and growth of a cultural tradition." Routledge and Kegan Paul, London, 1955.

12. At the time of the rise of Islam, Persia as well as the former Roman or Byzantine territories were already highly urbanized. And, the Arab-Muslim conquerors very often felt an understandable reluctance to settle in the ancient town as a minority exposed to the hostilities of alien subjects. Thus, they very often founded monasteries in which communities were assembled under the direction of religious chiefs. These scattered settlements served to consolidate the empire on the frontiers as well as in the interior, and very often became the nuclei of very important cities such as present day Tlemcen in Algeria, Rabat in Morocco. More details about the first Islamic cities are given by:
Pauty, E. "Villes Spontanees et villes creees en Islam." Annales de l'Institut des Etudes Orientales, IX. Alger, 1951. pp.52-75.
13. Abu-Lughod, J. "Contemporary relevance of Islamic urban principles." In Ekistics no.280, Jan/Feb, 1980. pp.6-10.
14. Grunebaum, G. 1955. op.cit.
15. Lapidus, I. "Muslim cities in the later Middle Ages." Harvard University Press, Cambridge, Mass, 1967.
16. Al-Suyuti's. "Al-Muwatta and its interpretations." Dar Ihya al Kutub al-Arabiyah, Cairo, (n.d).
17. Malik, A. "Al-Muwatta wa sharhiha lil-suyuti." (Al-Muwatta and its interpretation by Al-Suyuti), Dar Ihya al Kutub al-Arabiyah. Cairo, (n.d).
18. The Qur'an. English translations of the Qur'an include: "The Holy Qur'an: Text, translation and commentary." By Abdullah Yusuf Ali. Published in the U.S.A. by Khalil Al Rawaf, 1946.
"The Koran interpreted." By Arberry, J. London: George Allen and Unwin Ltd, 1955.
19. El Bukhary. "Sahih al'Bukhari." 9 parts in 3 vols. Kitab al-Sha'ab, Cairo, (n.d).
20. Wiet, G. "Cairo: city of Art and Commerce." translated by Seymour, F. Norman: The University of Oklahoma Press, 1964. p.87.
21. El Bukhary. (n.d). op.cit.
22. Abu-Lughod, J. 1980. op.cit. pp.6-10.
Shalaby, T. 'Behavioural patterns and the Arab house.' In Hyland, A., and Al-Shahi, A. "The Arab house." Proceedings of the colloquium held in the University of Newcastle upon Tyne 15/16 March, 1984. CARDO. 1986. pp.73-79.

23. Rapoport,A. op.cit. p.289.
24. Ittelson,W., Proshansky,H., Rivlin,L. and Winkel,W. "An introduction to environmental psychology." New York: Holt, Rinehart and Winston, 1970. p.181.
25. Altman,I. "Privacy: a conceptual analysis." In Environment and Behaviour, 8(1). 1976. p.8.
26. Laufer,R., Proshansky,H., Ittelson W., and Rivlin L.,(eds.). "Environmental psychology: Plan and his Physical setting." New York: Holt, Rinehart & Winston, 1970.
27. Proshansky,H., Ittelson,W, and Rivlin,G.(eds.). "Environmental psychology." New York: Holt, Rinehart & Winston, 1970.
28. Westin,A. "Privacy and freedom." New-York, Atheneum, 1970. p.32.
29. Altman,I. 1976. op.cit.
30. Altman,I. "Privacy regulation: culturally universal or culturally specific?" In journal of social issues, 33(3), 1977. p.66-84.
31. Ibid.
32. Rapoport,A. 1969. op.cit. p.66.
33. Margulis,S. "Conceptions of privacy: current status and next steps." In Journal of social issues, 33(3), 1977. pp.5-21, p.7 in particular.
34. Abu-Lughod,J. 1980. op.cit. pp.6-10.
35. Rapoport,A. "Environmental preferences, habitat selection and urban housing." Journal of Social Issues, 36(3), 1980. p.118-34.
36. Planhol,X. "The world of Islam." Ithaca, New-York: Cornell University Press, 1956. pp.23-26.
37. Bourdieu,P. "The Algerians." Boston: Becon Press, 1962.
Chombart de Lauwe,P. "Famille et habitation: sciences humaines et conceptions de l'habitation." Centre National de la Recherche Scientifique, Paris, 1959.
38. Moughtin,J. "Hausa Architecture." Ethnographica, London, 1985.
39. Arensberg,C and Kimball,S. "Culture and community." Harcour Brace and World, New York, 1965.
40. Bourdieu,P. 1962. op.cit. pp.3-4.

41. Moughtin, J. 1985. op.cit.
42. See paragraph (2.2). I also came lately accross other very interesting conceptualisations of culture. Among these are:
Agnew, J. et al. op.cit.
Bauman, Z . 1973. op.cit.
Williams, R . 1958. op.cit.
Williams, R . 1982. op.cit.
43. Benevolo, L., in "The origins of Modern town Planning", Routledge and Keegan Paul, London, 1967, p.2, argues that this is due to the disappearance of the 'open field' system around the old English vilages, which meant that the land could be better utilized, but impoverished the small yeomen.
44. Ibid., p.3
45. Ibid.
46. Ibid., p.6
47. Lavedan, P., "Histoire de l' Urbanisme", Vol iii, Paris, 1958.
48. Benevolo, L, "The history of the city", MIT Press, Cambridge, MA, 1980, p.734.
49. Blumenfeld, H., "The modern Metropolis", The MIT. Press, Cambridge, MA, 1972, pp.63-64.
50. McCord, N., "North-East of England, the region's development 1760-1960", Batsford Ltd, London, 1979, pp.144-147.
51. Gugler, J., "Urbanisation and social change in West Africa", Cambridge University Press, London, 1978.
52. Daunton, M., "House and home in the Victorian city: working-class housing, 1850-1914", Edward Arnold, London, 1983.
53. Blowers, A. and C. Hamnett, 'The future urban society' in "The future city", The Open University Press, 1973, p.84.

PART TWO

COMPARATIVE ANALYSIS OF A TRADITIONAL AND A MODERN SETTLEMENT - Assesment of their supportive role -

The long term objective of this research being to establish guidelines for the design of culture responsive environments, this part of the study consists of a comparative analysis of a locally built and a professionally designed housing area in the city of Ghardaia, in the M'Zab region, Algeria. This enquiry is guided by the two last hypotheses of the study,

Hypothesis 2 :

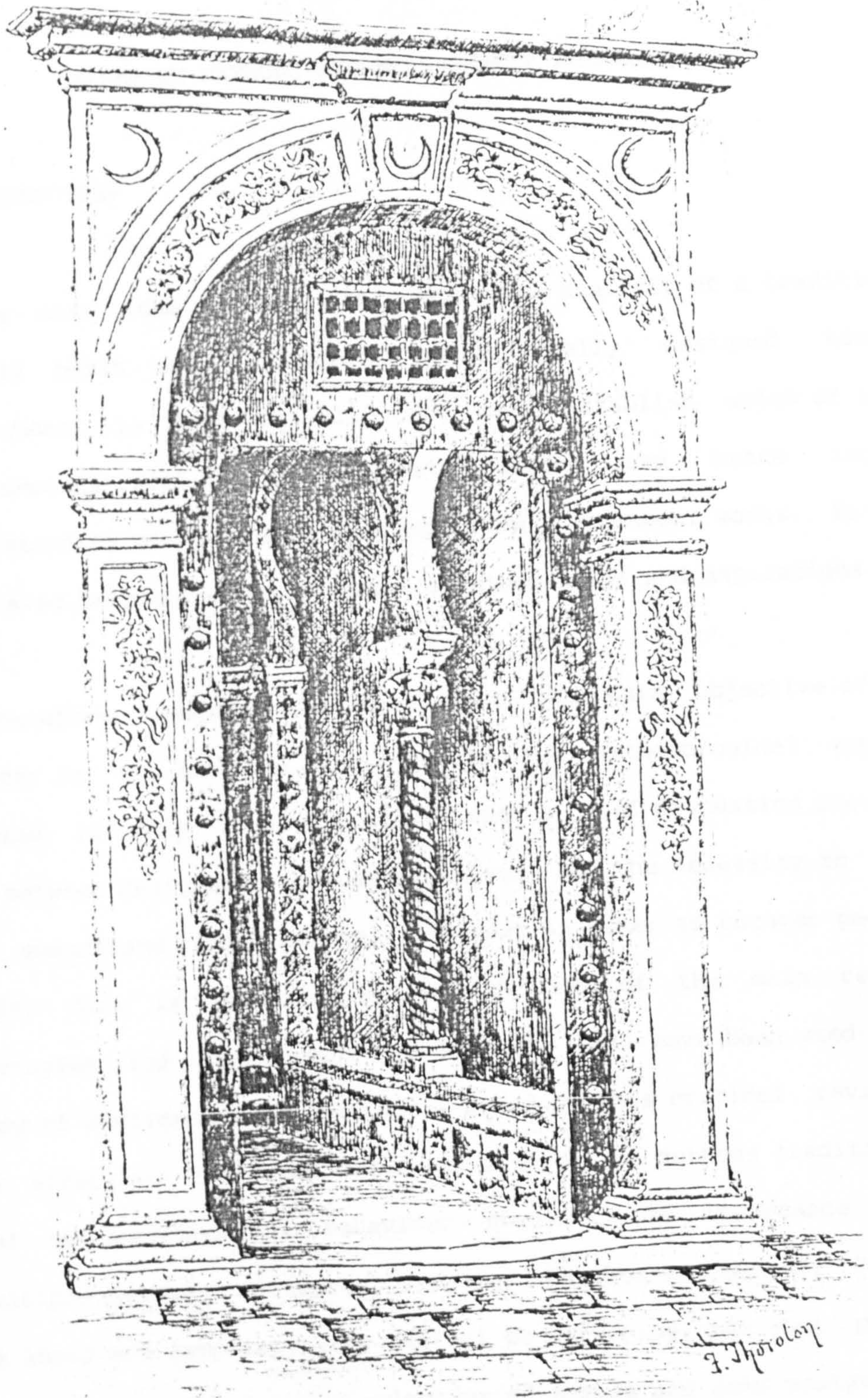
Mass-produced housing ignored the socio-cultural needs of the Algerian society. It hardly supported commonly desired activities, did not fulfil the required level of privacy and did not facilitate social interaction; hence, it disturbed the overall well being of its inhabitants.

Hypothesis 3 :

Cross-cultural influences which are usually transmitted by conquest, trade, and/or mass-media, lead to change of values and affect attitudes to settlement patterns and built form.

The comparative analysis is intended to provide a better understanding of what a culture responsive environment is and how it works. In this study the relationship between house forms and settlement patterns and aspects of social life is the dominant theme. A particular focus is on the way in which places are used, experienced, and evaluated, by people of the two settlements, and the contradictions that emerge between locally built and professionally designed housing. These two case studies were carried out by using multi-methods research strategy, including field work studies of the design and layout of the area, questioning, interviews, direct observation and archive records.

CHAPTER THREE



ALGIERS : MARBLE DOORWAY, RUE BRUCE

CHAPTER THREE

RESEARCH METHODS AND MEASUREMENT TECHNIQUES

3.1 INTRODUCTION

The main idea behind the comparative analysis of a traditional locally built and a modern professionally designed housing environment is that it will not only establish which of these environments best meets people's needs, and hence improve understanding of how a culture responsive environment works. But, it will also help to identify people's future needs and aspirations.

Therefore, despite the fact that the main objective of this chapter is to describe and justify the methodological approach adopted in this study; it starts with a brief discussion about the gap between designers' and users' values, and the necessity to study and understand environmental behaviour in order to uncover people's needs. This is followed by an overview of the main research strategies and measurement techniques that have been used in the study of environmental behaviour. Based on this critical review of the strengths and weaknesses of each of the methods traditionally used in environmental behaviour studies, the importance of a 'multiple-methods' research strategy is then introduced. Finally, the logic and sampling being central to surveying, the last part of the chapter deals with the selection of sample and data analysis.

3.2 THE REASONS BEHIND STUDYING ENVIRONMENTAL BEHAVIOUR

At one time planners and environmental designers assumed that they knew what was best for the public. They assumed they knew what the public's needs and preferences were, and what the real-world constraints were. It is now widely recognized that planners' and designers' conceptions of needs and preferences might be quite different from those of the public [1]. and that designers and the public are two groups with different values [2].

Canter (1977)[3] suggests that our conceptual systems being based on our interaction with our surroundings, their structure is strongly affected by roles, activities and lifestyle. This implies that great differences exist between those professionals whose education, training and activities are related to environmental issues and ordinary people.

Rapoport (1982)[4] adds that this difference is due to the complexity of modern society where designers and users no longer share the same images and schematas, whereas in traditional societies images were clear and shared by everybody.

Indeed, in the past, builders and clients were basically from the same world. Their attitudes and values which were largely codified by tradition, were most of the time similar. Furthermore the client was in most cases the user. In a modern industrial society, the

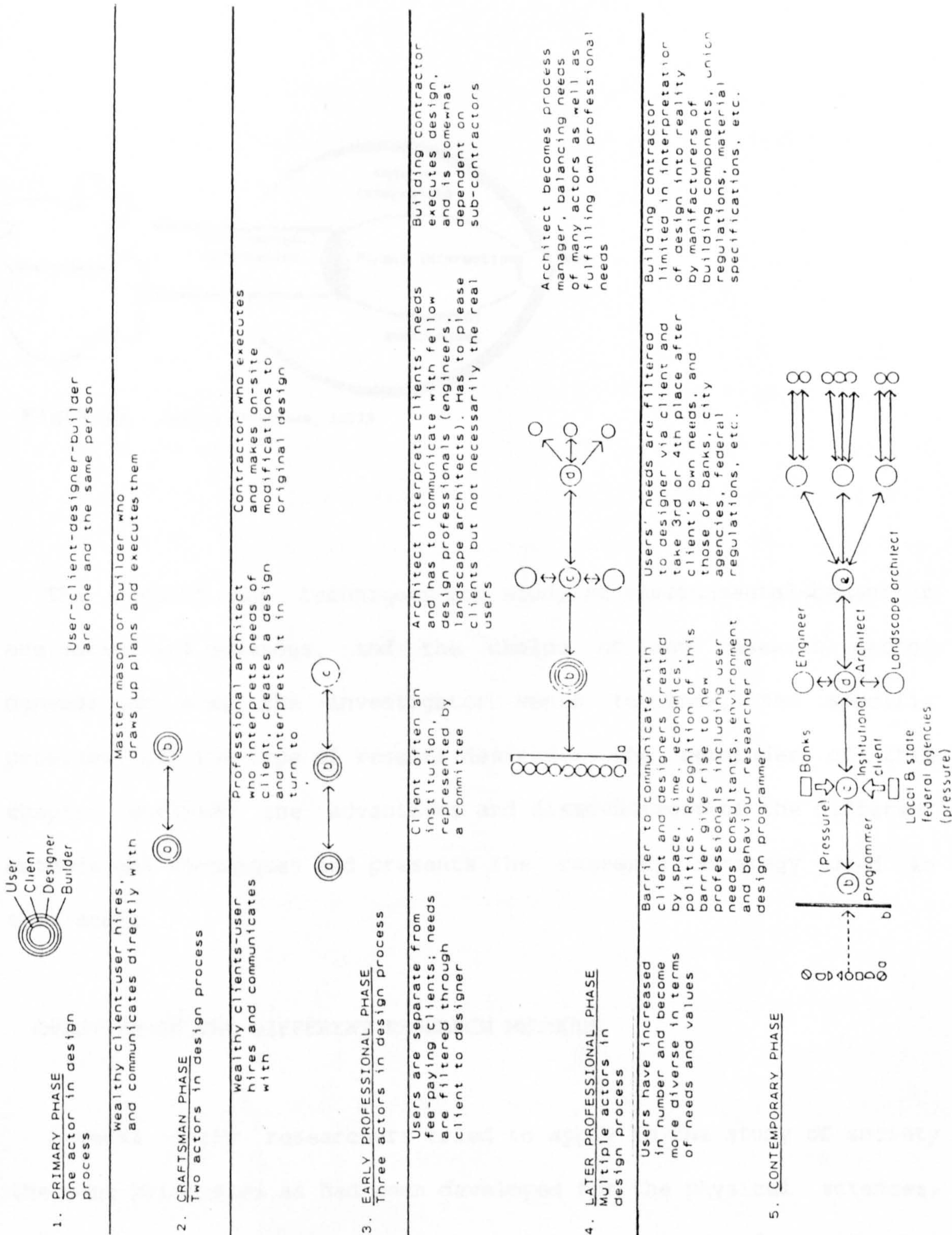
relationship between the producers and users of the built environment has become more complex [5]. Diagram (3.1) shows that it has become more frequent for designers to, work for government or private organisations. However, the requirements of these organisations, cannot automatically be equated with those of diverse individuals.

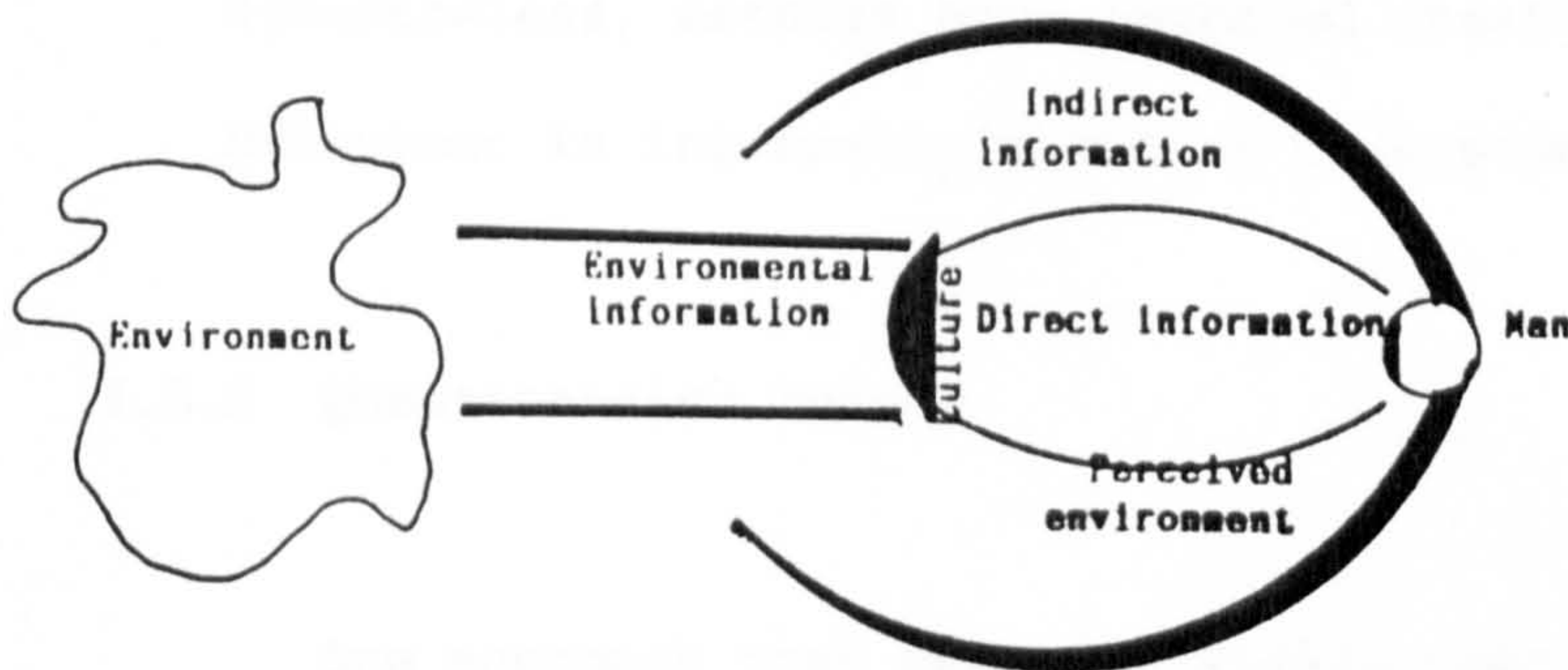
With the widespread recognition of the pluralistic nature of society and with numerous demands for users involvement, finding ways of identifying users real needs [6] and preferences, rather than to rely on designers' intuitions has become the concern of an increasing number of researchers [7].

One approach to this problem of identifying people's needs, and the one advocated in this study is through studying human-environmental behaviour [8]. The main idea behind the study of behaviour, is that needs underlie overt actions and therefore, studying behaviour will uncover and give details about needs [9].

Furthermore, because behaviour usually occurs in response to environmental stimulus (diagram 3.2), analysing behaviour will give some details about the way people perceive their environment, what they think about it, how they interact with it, how and in what ways it affects them, how they react to it, and the role of culture in determining environmental meaning, attitudes, and quality [10].

Diagram(3.1): Relationship between users and designers.





Fig(3.2) (source: Porteous, 1977)

The methods and techniques for studying environmental-behaviour are varied and numerous, and the choice of any research method depends on what the investigator wants to know, the specific problems, and the type of results desired. The remainder of this chapter analyses the advantages and disadvantages of the different methods and techniques and presents the research strategy used in this study.

3.3 OVERVIEW OF THE DIFFERENT RESEARCH METHODS

Several early researchers tried to apply to the study of society the same principles as had been developed for the physical sciences, but they very quickly found that systematic study of man is quite difficult [11]. Though there are certain uniformities human behaviour is more variable than animal behaviour; and thus less predictable. In addition, researchers can be subjectively involved

with the people studied and these latter can refuse to cooperate. Nevertheless, methods have improved greatly in recent years and human behaviour is increasingly better understood.

3.3.1 Questionnaire survey

One approach that has been widely used in social sciences and with increasing regularity by designers is commonly known as the survey. It involves the collection of data from populations or samples of populations either by questionnaire or by more or less structured interviews [12]. Asking questions in interviews and questionnaires has been particularly used in such environment-behaviour topics as perception, aspirations, attitudes and preferences.

It is not the purpose of this chapter to add to the already extensive literature on the techniques of carrying out surveys, however it is quite appropriate in the context of this section to present a brief picture of the data-gathering techniques associated with survey research. Table (3.1) gives a brief overview of the advantages and disadvantages of mail questionnaires and personal interviews. Surveys are the fastest way to collect a great deal of data, but this takes a long preparation. A well-run survey usually takes months of preparation and more months work on the data [13]. Many people think that asking a lot of questions and running answers through a computer is the only way of making research data convincing to others. The apparent exactness of statistical analysis is a

Table(3.1): STRENGTHS AND WEAKNESSES OF QUESTIONNAIRE SURVEY METHODS.

TECHNIQUES	STRENGTHS	WEAKNESSES	EXAMPLE
MAIL	<p>Can be answered at the convenience of respondent.</p> <p>Can cover large samples.</p>	<p>Cannot be used when the level of illiteracy is high.</p> <p>Inability to secure spontaneous answers.</p> <p>Order and sequence of questions is not controlled by researcher which bias the responses.</p> <p>Poor response rates (20% to 40%).</p>	
PERSONAL INTERVIEWS	<p>Interviewer makes sure respondent understand questions.</p> <p>Can obtain supplementary information about respondent which is important in attitudinal surveys</p> <p>Ability to collect observational data about respondent's dwelling.</p>	<p>The interviewer may influence the respondent.</p>	<p>EXAMPLE</p> <p>Lansing Marans, and Zehner (1970)[1].</p>
QUESTIONS DESIGN	STRENGTHS	WEAKNESSES	
CLOSED QUESTIONS (Usually have a series of answers from which the respondent chooses).	<p>Easier and quicker to answer.</p> <p>Simple quantification and analysis.</p>	<p>Force respondent to make a choice among restricted possibilities and issues he may not have previously considered.</p>	
OPEN QUESTIONS (to which respondent can answer in his own words).	<p>Spontaneous responses expressed in the own words of respondent giving the researcher more knowledge about respondent.</p>	<p>Difficult to answer and to analyse.</p>	

useful way to win arguments, however, quantitative questionnaire data not augmented by qualitative data from other methods can provide a superficial understanding of important problems [14].

Marans (1975)[15] among others identified a number of problems with survey research. First, the method relies on the individual's memory, which may be far from accurate in the recall of specific components of settings or events. Second, interviewees might find it difficult to provide information about environments they did not experience. Third, people may not answer some questions honestly or may feel that specific answers are expected from them. Fourth, people do not usually easily express their spatial and design preferences in response to direct questioning. They are rarely able to give exhaustive or priority-ranked lists of their needs and preferences, which leads designers and/or researchers to make assumptions. In doing so, these latter impose their own values on the needs assessment process, thus in part invalidating the purpose of directly questioning the users. A final concern is the 'mechanical' nature of survey, in the way that it usually presents people with statements and consists of finding the number who agree or disagree with these. Furthermore, since the investigator selects the questions, the data collected is in the first place a reflection of his interests, and therefore, only secondarily reflects the experience and interests of the people being surveyed.

One way of avoiding or at least minimizing these problems is to augment survey data with information gathered by other means such as, for example, trade-off-games which would provide the designer with more complete knowledge about people's preferences and choices under 'real life' constraints, and observational techniques which would give information about what people actually do rather than what they say they will do which is very often a quite different thing.

3.3.2 Trade-off-Games

The concept of trade-off implies compromises and constrained choices among various attractive alternatives, not all of which are affordable. Very often something is given up in order to gain something else. Trade-off-games developed as a response to criticisms about the subjectivity of preferences uncovered by traditional research approaches. Most of these preferences were unconstrained and when faced with real-world constraints the designers had to filter them through a set of 'trade-offs'. What most critics argue is that people would have changed their preferences differently from what the designer had anticipated, if they knew about these same constraints [16].

Wilson (1962)[17] was the pioneer of such games. His neighbourhood game is still used by many researchers. It consists of alternative degrees of attributes such as neighbourhood physical quality and sanitation services, each having a price tag attached.

Respondents are given a set of tokens representing the total amount of money they can spend to get the amenities on the game board. Using the amount of money they were attributed and without exceeding it, respondents are forced to select and choose among the alternatives offered to them.

It is noteworthy, that although trade-off-games and other design games in general [18], provide designers with more complete information as to the users desires, as well as permit a better communication between designers and users, the designer will still have to filter and synthesize the decisions people have made. Another concern is the 'reactive' nature of games. Respondents may refuse to take part, or will not take the game seriously. However, these limitations are not inherent to simulation games but illustrate the necessity of combining different research approaches. One way, for example, of getting more information about people's preferences is to focus on preferences as expressed in terms of behaviour [19]. The assumption behind the 'preferences are expressed in terms of behaviour' approach is that the choices users make in real life are the best indicators of preferences. Thus, what researchers actually need is information about what people actually do, and therefore the only reliable way is to study their behaviour by observing what choices they have actually made when confronted with a variety of conditions. This leads us to look at the strengths and weaknesses of observational techniques.

3.3.3 Observations

To understand environmental behaviour, the designer needs to have complete and full information of people's interaction. This includes what can be observed outside of them as well as what is going on inside of them. This point has been argued by Canter (1977)[20] who demonstrated that there was considerable value in treating users both as 'subject' of research, in that they express their own viewpoints, feelings and attitudes, and as 'objects' of research in which they are studied by observing them.

Observing behaviour in physical settings can generate data about people's activities and the relationships needed to sustain them, about expected uses, new uses and misuses of places. At the same time, observation of environmental behaviour can give information about how a physical environment supports or interferes with behaviours taking place within it. In a playground, for example, an observer sees a group of pupils playing, supervised by their teacher, who very quickly stands up every time the pupils move out of her sight. This event tells an observer not only about the pupils' games and activities, but also about the importance of maintaining a visual relationship between the teacher and her pupils.

Observation can also help in getting an idea about the role of time in the life of an environment. Furthermore, there is now a large number of observational strategies which can be used by

environmental researchers without disturbing or influencing the subject's normal behaviour. In these cases people are usually unaware that their actions are being measured, and will therefore tend to behave normally. (Table 3.2, describes the strengths and weaknesses of the most commonly used measurement techniques).

Although they offer many benefits, observational methods have a number of disadvantages. First, observational methods are time-dependent and time consuming as the investigator must be present whenever the behaviour under study is taking place. Second, misidentifying one behaviour for another, or failing to code all the activity because it is occurring too quickly, can damage a study. Third, whatever the observer does, there will be always the danger of what is known as the 'Hawthorne' effect that subjects who know they are being watched as part of an experiment often change the way they act. Fourth, observing behaviour reveals only externalized activities, it does not tell other essential things, such as for example what people intended to do but never did and what they still intend to do. Finally, there is the problem of subjectivity which characterises the designer and human beings in general. Indeed, one is always tempted to judge the situations in one's own terms, and one's experience usually leads one to expect the subject to perform in certain ways.

In sum, what emerges from this brief overview of research methods and techniques is that each method has its own bias, and that using

Table(3.2): STRENGTHS AND WEAKNESSES OF DIFFERENT OBSERVATIONAL METHODS.

TYPE OF OBSERVANT	STRENGTHS	WEAKNESSES	EXAMPLE
DISTANT OBSERVER (Secret outsider, unseen by the people observed).	Unobtrusive	Gives only an overview of situation.	Moore [1].
NON-PARTICIPANT (recognized researcher)		Intrusive. May affect action in unknown ways (Hawthorne effects).	Blau [2].
MARGINAL PARTICIPANT (adopts position of a commonly accepted yet not involved participant)	Unobtrusive. Good understanding of the situation.	Familiarity with position adopted may lead to overlooking important facts.	
FULL PARTICIPANT (adopts a position to the situation studied)	Unobtrusive. Full understanding of situation.	Involvement may increase subjectivity. Observer can be deliberately deceived.	Gans [3].
MEASUREMENT DEVICES	STRENGTHS	WEAKNESSES	
NOTATION	Simple	Observer has to decide on the spot what to record and what to overlook.	Barker [4].
MAPS	Particularly useful to record several people in one area at the same time.	Difficulty to observe an area simultaneously.	Ittelson et al [5].
PRECODED CHECKLISTS	Provide quantifiable data.	Demand previous diagnostic	Ittelson et al [6].
PHOTOGRAPHS	High illustrative quality.	May raise ethical questions.	Hansen and Altman [7].
VIDEO-TAPES	Particularly useful to record sequential situations	May raise ethical questions.	Davis and Ayers [8].

several methods ought to improve one's chances that the bias of one is cancelled by the others. Several studies [21] have shown that the most effective way to study environmental behaviour is to employ several methods in parallel. The appropriate mix of methods being the one that enables the researcher to achieve his/her ends with greatest control over side effects. For example, a combination of direct observation and interviews in Chandigarh, Le Corbusier's modern capital of India's Punjab province, showed that many of the middle-class residents of this modern administrative centre still followed the traditional Indian practice of cooking on portable stoves on the floor, although most of them reported (in a previous interview) that they used modern cookers and the kitchen's work-tops to prepare meals [22]. In fact, most people often hesitate to report that they break formal or conventional rules.

3.3.4 Multiple research methods

The quality of research data rests heavily on whether questions and/or other techniques used address topics salient to respondents and to the researcher's purpose which is to know how people interact and respond to environments. The previous brief review of different environmental behaviour research methods and techniques showed that the most effective way to study environmental behaviour is to employ several methods in parallel. As this would not only minimise bias but would also give a better and more complete image of people's daily interaction with their environment.

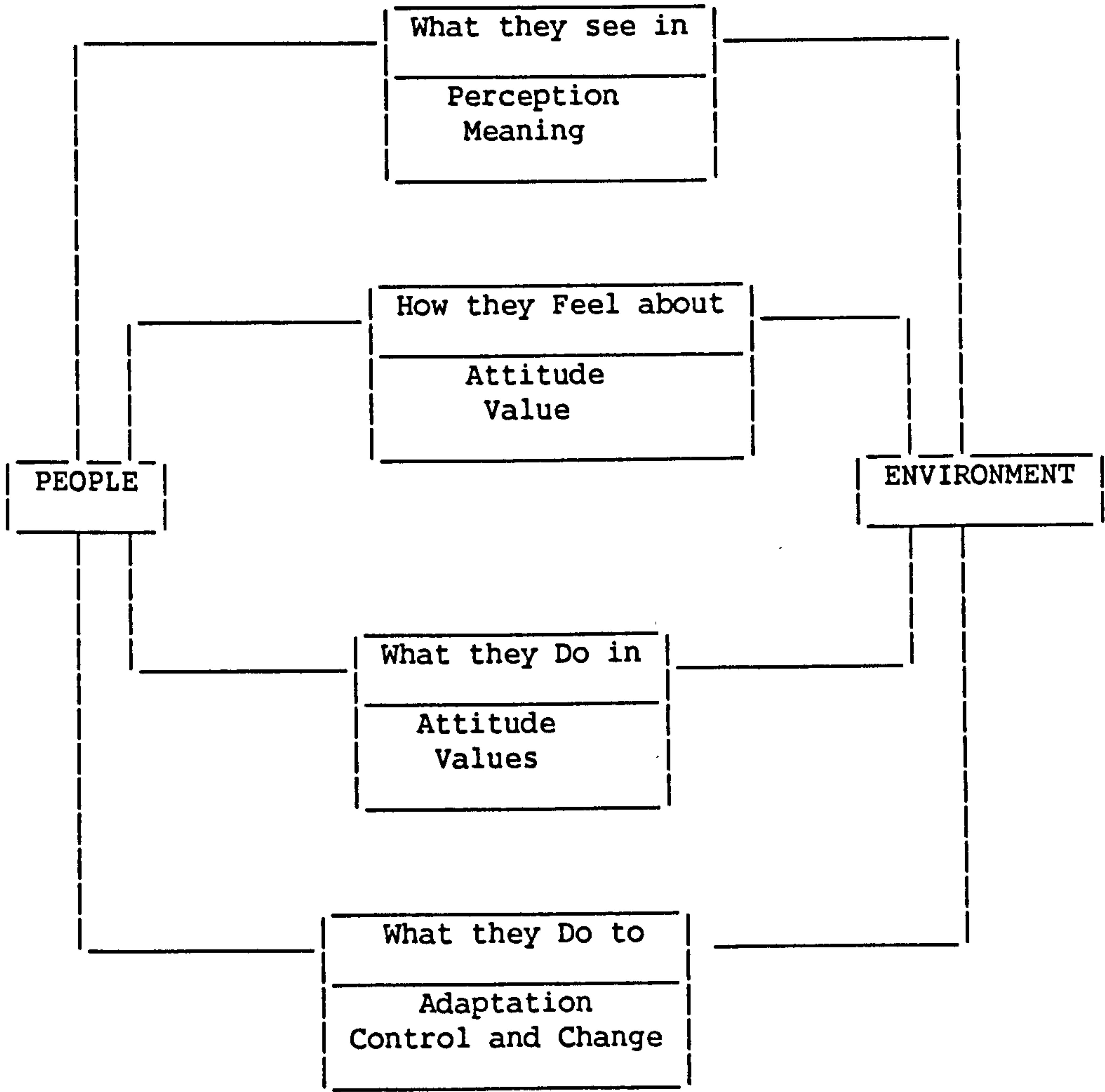
In effect, people's daily experience and reactions to their actual settings affect their behaviour not only in those particular settings but in others as well. Past experiences in environments also affect behaviour [23]. Hence, the more the designer knows about how people 'see' environments, what 'they feel' about them, what 'they do in' them, 'what they do to' them, and what 'they know' about environment, the more he/she will understand their behavioural and emotional reaction to existing as well as hypothetical environments (diagram 3.3).

Perception [24] is one of the most important mechanisms linking people and their environments [25]. People make sense of their environments by observing them with all their senses and then organizing and interpreting what they observe. This interpretation, in turn influences what they do in an environment and to it. In the same manner, people's attitudes towards their environment, the way they evaluate it, influence how they respond to it.

3.4 THE ENQUIRY: USING MULTI-METHODS RESEARCH

In this particular study, the purpose of the enquiry is two-fold: To test the second and third hypothesis of the study, and to show the importance of basing design decisions on people's real and 'contextual' needs, rather than on the designer's intuitions. The designer's role is to shape the environment so that certain activities can take place and so that certain human needs are

Diagram (3.3): People's Interaction with their Environment



satisfied. It is therefore quite normal that the designer must obtain information from and about the people he is designing for.

The process used in the actual inquiry is broadly summarized in diagram (3.4). As far as the methodology used is concerned, in the light of the critical review presented in the preceding sections, this study used multiple-method research strategies, different measurement techniques as well as diverse sources of information, and consisted mainly of:

1. Establishing how residents used, appropriated, felt about, and evaluated their dwelling-settlement system, and how the different systems met the needs of their users:

- a. By observing the residents' interaction with their environments:

- 1) by observing and studying behaviour at the neighbourhoods and dwellings selected.

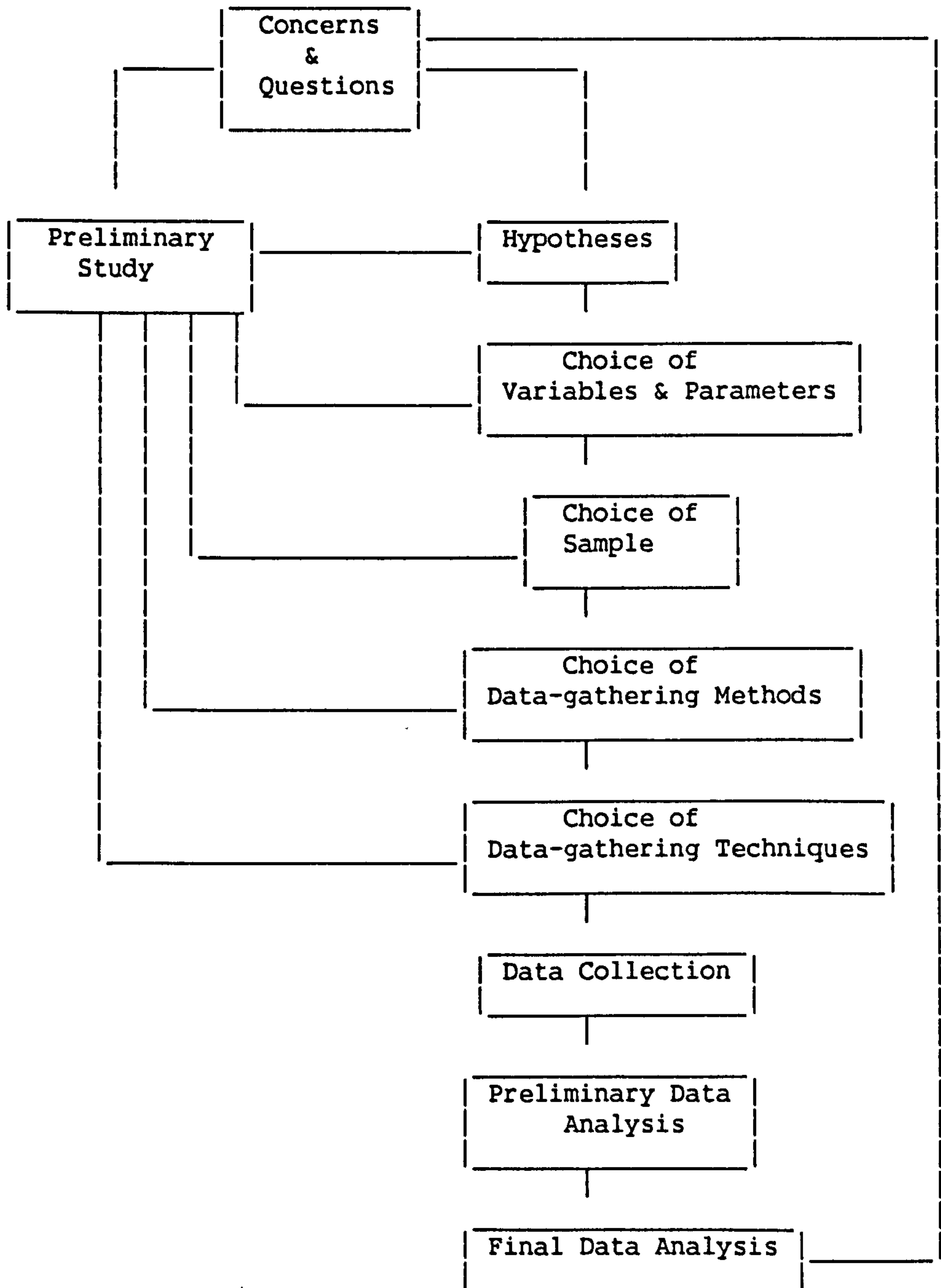
- 2) by observing and recording physical traces particularly furniture layouts in the selected dwelling's living rooms and courtyards.

- 3) by observing physical clues such as adaptive changes to the dwellings and surrounding landscape.

- b. By interviewing the residents:

- 1) by discussing the physical characteristics of their residential environment.

Diagram (3.4): General Process Involved in the Study.



- 2) by discussing their household's characteristics such as household's structure, socio-economic status, origin and past residential patterns.
- 3) discussing their activity patterns and the way they used the different places and facilities.
- 4) by discussing their degree of satisfaction with their residential environment, their likes and dislikes.
- 5) by talking about changes people have made in their dwellings and surroundings, about unfulfilled desires to make changes, about adaptations and the intended effects when making them, about expectations for future adaptations.

2. Identifying what peoples' preferences and aspirations were:

- a. By developing a trade-off-game - Through which respondents express their trade-off preferences by making a series of choices -
- b. By interviewing private building contractors - by discussing market's demands, and the most popular type of dwelling -
- c. By analysing archival records - by studying the latest architectural plans and drawings submitted for planning permission -

- d. By site visits - by visiting all private housing development still under construction in the area -
- 3. Identifying how design decisions were made:
 - a. By analysing diverse documentary sources:
 - 1) by studying the 'P.D.U.' or Master Plan of the area.
 - 2) by studying the building regulations, and official reports.
 - 3) by analysing all 'permis de construire' or planning applications submitted during the first six months of 1986, and identifying the reasons for refusals.
 - b. By interviewing designers and other local housing authority officials - by discussing the planning and building regulations as well as the criteria for granting a planning permission -
- 4. Analysing the relationship between designers and users. The residents' attitudes towards the planning regulations and administration - By interviewing the different groups respectively -
 - a. by discussing users' respect for the planning regulations
 - b. by discussing the reasons for the non-respect of the planning regulations.

Based on the preceding overview of the different research methods and measurement techniques, and considering the study's objectives and concerns as well as the contextual setting of the research, this study adopted a 'multiple-method' research strategy including site visits, interviews, gaming simulations, direct observation and analysis of archival records. The choice of the measurement techniques was also influenced by the concern for the respondents rights to personal and community integrity and privacy. All efforts were made so that the information needed could be gathered ethically [26].

Carrying out a research in developing and Islamic country is usually done under different conditions than those in the developed ones (for example, while most people in the developed world are acquainted with interviewing either from radio, television or personal experience, in some countries of the developing world, the majority of people don't know what an interview is and therefore can have mixed reactions. Furthermore in most of those countries the degree of illiteracy is quite high, resources and official statistics very scarce, and gaining access relatively difficult). This chapter gives a broad picture of the way the research was carried out.

3.4.1 The selection of the study area

The case study was influenced by the general principle that, in research, it is easier to start with extreme situations where effects are strongest and hence seen more clearly. Furthermore, the aim being to understand what a 'culture-responsive' environment is, and how it works, preferences had to be directed to those regions that exhibit strong manifestations of socio-cultural values in their physical environments. The M'Zab region, in Southern Algeria was 'classified or listed' in 1962 because of its unique historical urban and architectural characteristics. However, the industrialisation of the region due to its proximity to Algeria's two main oil fields led to the development of various and numerous housing development schemes resulting in a striking juxtaposition of old and new. This, added to the author's personal interest and familiarity with the area, made Ghardaia, the main city of the M'Zab region, a very suitable setting for testing the study's hypotheses.

3.4.2 Selecting the Survey Areas

In the M'zab, as in other parts of the country, the Algerian government is relocating people away from deteriorated or dilapidated traditional settlements to recently constructed modern settlements. The 'Quartier des Anciens Moudjahidines' is one of the most popular neighbourhoods in the 'ksar of Ghardaia'. Built in the 14th century, it is now under reconstruction. Many of the dwellers in this

neighbourhood have been rehoused in the newly built area of 'Sidi-Abbaz'.

Furthermore, the friends who made accommodation available during the field work were living in the 'Quartier des Anciens Moudjahidines' and were awaiting rehousing in the 'Sidi-Abbaz' area. The possibility of a 'marginal-participant' enquiry (this concept was borrowed from Zeisel, 1984 [27]) or at least of a research with 'un pied-a-terre' in the area studied, made 'Sidi-Abbaz' and the 'Quartier des Anciens Moudjahidines' a quite straightforward choice.

3.4.3 Selecting the Households to be Interviewed

After meeting with a number of people from the 'DUCH' (Direction de l'Urbanisme, de la Construction et de l'Habitat) 'l' Atelier du M'zab' (organisation responsible for the conservation of the area), the Algiers' School of Architecture, and some local residents, it became clear that no household surveys of this kind had ever been done before because of the strict rules of privacy, still very strong in this part of the country.

Many people were also concerned that the social conditions would form a barrier to the random selection of dwellings because of their inaccessibility. However, most of them expressed an interest as the author was going to conduct the survey herself, and that being a woman would perhaps make the access to the dwellings much easier.

However, the non-availability of any satisfactory sampling frame, made the possibility of using a pure random sampling method quite difficult. Furthermore, the numbering system in the traditional neighbourhood being incomplete, with sometimes only the streets and 'culs-de-sac' being numbered, some sort of systematic numbering had to be done before any sample could be chosen.

Using a land use map at a scale of 1:1000, the area was divided into blocks bounded by main streets. The purpose of clustering the area was dictated by historical as well as practical reasons. In effect, like in most Indigenous Islamic settlements (see paragraph 2.3.1), the building of the traditional city of Ghardaia started by giving plots of land to groups of extended families or Achira (the forthcoming chapter, and especially paragraph 4.9.1 give more details about the origin and evolution of the settlement system in the M'Zab). Each group of extended family tended therefore to occupy a bounded plot. Obviously, many changes happened since then, however some blocks still house a few people sharing the same ancestors. On the other hand, it was found that dividing the area into blocks would make the numbering process less confusing and would avoid any missing elements.

All houses in each block were given a number starting from 1 to N. House numbers were consecutive along the street. Having numbered on the map all the houses, systematic sampling was used to select the individual dwelling to be visited. This method of sampling was

chosen as it is visibly easier and faster to use than a random number table [28]. It involves starting at a random house in the block and taking every Nth dwelling then on to the end of the block. In this case, every 10th dwelling which represents a 1:10 house sample (see appendix III). The same systematic sampling method was also used for the modern residential area of Sidi-Abbaz. Only there official house numbering was used.

The sample size, namely the 1:10 house sample was influenced by many reasons. The main objective of the study being to contact each household personally and carry out prolonged interviews, the sample size had to be small enough to allow a depth and richness of detail and yet sufficient to be representative of the areas studied. A total of fifty-eight dwellings were studied (24 out of 256 in the new settlement of Sidi abbaz, 34 out of 400 in the traditional neighbourhood); representing a percentage of slightly less than 10% of the dwellings in each neighbourhood. Plates A3.1 and A3.2 in appendix III provide more details about the repartition of the sample within the study area.

3.4.4 Selecting the Planning Authorities and the Building contractors

All ten members of staff in the 'DUCH' (Direction de l'Urbanisme de la construction et de l'Habitat) and 'l'Atelier du M'zab' were interviewed.

The building constructors' sample regroups 32 small scale entrepreneurs, contractors and builders. The method consisted of visiting all construction sites in the area and interviewing the builders there. The presence of a women on a construction site being still contested in this part of the country, the interviews were mainly carried out by the researcher's husband who, being himself a civil engineer, made the contacts much easier.

3.4.5 Carrying out the Research

Being physically and socially indistinguishable from the general population our presence in public places was hardly noticed. Furthermore, because our host (a relative) introduced us as 'students in training, who had come to learn about how things are done over here', we were very quickly accepted as 'Malik's student cousins'. The role of student-learner' was very useful as it not only justified the use of notebooks and camera, but it also helped to observe and record some behaviour almost unobtrusively. Indeed, being a kind of 'Novice' and therefore unimportant and harmless seems to have persuaded most people to get on normally with their daily activities despite our presence.

Observation in public places started by scouting the study areas and trying to identify the different 'activity spots'. These were then delimited on a map. Each of these places was then studied in detail at different times of the day and different days of the week.

About thirty minutes were spent in each place, observing and recording 'who was there', 'with whom', 'doing what', 'how' and 'where'. Observations were usually reported on maps or plans using symbols as well as annotations, although photographs were taken whenever possible.

Observation of the household's behaviour inside the dwellings was unstructured and was usually carried out while conducting the interview. When possible short 'observational notes' or comments were added to the respondents' answers, however in most cases 'mental' notes were taken and translated into full field notes once at home. Mental recording was also relied upon when studying furniture layouts in the respondent's living rooms for a study of the impact of modern furniture on the flexibility of traditional space. Indeed in four dwellings respondents objected to the use of a camera and even sketching. In these cases, a content list was made but the arrangement and grouping of furniture was only memorized. Once at home drawings were made. Any missing information was completed during a call back visit. However, in most cases, having in a first stage gathered the detailed plans of the dwellings selected, all furniture was reported on the floor plan using standardized architectural furniture symbols. Photographs were also taken whenever possible.

Residents were contacted personally, in all cases the housewife was the respondent. The length of the interviews lasted from one to

three hours and in most cases tea was served. In two occasions, where refusal would have been an insult, even lunch was shared.

The interview was introduced to the respondents as an attempt to ask their 'advice on how to make the future residential environment better'. Several studies showed that respondents like to see themselves as advice givers rather than 'guinea pigs' [29].

To try to maximise information, minimize fatigue, and to give a 'natural flow' to the interview, questions were grouped by topic and started from general to specific. Furthermore to avoid giving a 'disclosure' aspect to the interview, and create a cooperative atmosphere between the interviewer and the respondents, closed, probing and open questions were combined. (See table (3.1) for more details about the advantages and disadvantages of these type of questions).

Finally, to break the monotony of the questioning process, and to allow the respondent a full 'participation', the interview ends with a trade-off-game. Respondents were presented with a single game sheet, illustrating different alternatives of housing attributes. Each of these alternatives had a price tag just underneath. Respondents were then asked to imagine they had a total of 40.000 DA or about 5200 pounds [30] to spend to choose and 'buy' what they wanted from the game sheet. Being confronted with many attractive alternatives, not all of which they could afford, many people were

reasoning and thinking hard, weighing up the 'pros and cons' of the different alternatives. This was very interesting as it helped to get spontaneous reactions and valuable information about the reasons for such choices and what people were trying to achieve by those choices in an indirect way. The game therefore helped to add more information about the respondents' needs, attitudes and values underlying their choices. Most respondents were very amused and interested by this game, and many questionnaires still have traces of small sticky fingers of curious little children who wanted to take part in this unusual game

Generally, all the questions were answered, and a high degree of motivation and sincerity was sensed by the author throughout the conducting of these interviews. Indeed, 98% of the households contacted agreed to be interviewed. The women showed a strong motivation to get involved in the interviews. Some households, which were not included in the sample were very disappointed and wanted to know why they were not 'chosen'.

3.4.6 Methods of Analysis

Questionnaire data were processed statistically using cross-tabulations and other sub-programms in the computer software package SPSSX (statistical package for the social sciences, X edition). The second package used in the analysis was GIMMS*. GIMMS* is a processing system for use primarily in the analysis of

geography data through the generation of maps, graphs and tabular information of a thematic kind (see appendix III for sample copies of the data-file, and other programmes used in the analysis).

3.5 CONCLUSIONS

Modern designers and planners are accustomed to dealing with needs quantified in terms of number of families to be housed, work stations, or school places to be provided. The conclusions here are that research cannot, and should not be restricted to quantifiable variables. It should encompass cultural and social variables often seen through human activities and behaviour. A critical though brief review of different methods used in environmental behaviour research suggests that the most effective way to study environmental behaviour and minimize bias is to employ several methods in parallel.

In this particular study the 'multiple-method' strategy was adopted. This included 'scouting' visits, direct detailed observation and recording, interviews, and trade-off games. Records of planning, design and building processes were also searched. Subjects were selected by a systematic sampling method, which yielded slightly less than a ten percent sample of dwellings in the study areas. The areas were chosen because of the juxtaposition of 'traditional' and 'modern' environments which they afforded.

Each area was examined for its historical background, its physical features, and the different methods of exercising control on physical development. This framework proved successful under tests in the field.

The enquiry started by a general study of the area, its historical background, physical features and the different methods of exercising control on physical developments - the topic of the next chapter.

3.6 NOTES AND REFERENCES

1.
This has been demonstrated by several writers among those are:
Gans,H. "The levitowners." New York: Pantheon Books. 1967.
Fried,M., and Gleicher,P.. "Some sources of residential satisfaction in an urban slum." In the American Institute of Planners, Journal. 27, 1961. pp.305-315.
Visher,J. "The adaptation and control model of user needs: a new direction for housing research." In Journal of Environmental Psychology, 5(3), 1985. pp.287-98.
2. Chombart de Lauwe,P. "Famille et habitation: sciences humaines et conceptious de l'habitation." Centre National de la Recherche Scientifique. Paris, 1959.
Lawrence,R."Housing, dwellings and homes: design theory, research and practice." Wiley, 1987. p.42.
3. Canter,D. "The psychology of place," Architectural Press, London, 1977.
4. Rapoport,A. "The measuring of the built environment: a nonverbal communication approach." Sage, Beverly Hills, CA. 1982.
5. Lauwrence,R. 1987. op. cit. p.42.
6. It has become very common for designers to talk about 'users' needs'. However, as Gutman (1975) notes, 'the word 'needs' is used very loosely', so that distinctions between biological and psychological needs, and individual and shared needs are not made explicit, Nevertheless, despite the polyvalence of human goals and values, some authors have proposed a hierarchy of needs they consider innate. Cooper (1975), for example, modified the list of human needs which Maslow (1954) presented and established the follwing list of housing needs:
 1. Shelter
 2. Security
 3. Comfort
 4. Socialization and self-expression
 5. Aesthetics.
7. Among those are: Cooper-Marcus,C. 'User needs research in housing.' In Davis,S(ed.). "The form of housing." Van Nostrand Reinhold, New-York, 1977. pp.139-70.
Michelson,W. "Environmental choice, Human behaviour and residential satisfaction." Oxford University Press. New-York, 1977.
Zeisel,J. "Inquiry by Design: tools for environment-behaviour research." Cambridge University Press, 1984.

8. Behaviour refers to things people do, including thinking, feeling and seeing, as well as talking to others and moving around.
9. Porteous, J. "Environment and behaviour: Planning and everyday urban life." Reading, Mass, Addison-Wesley, 1977.
10. Saarinen, T. "Environmental Planning: perception and behaviour," Houghten Mifflin Company. Boston, 1976.
Rapoport, A. "An approach to Design Third World Environments." In Third World planning review, vol.1, no.1, 1979.
11. Craik, K. "Environmental psychology." Annual Review of psychology, 24. 1973 pp.403-22.
12. Marans, R. 'Survey research.' In "Behavioural research methods in environmental design." Michelson, W. (ed.). pp.119-179. Stroudsburg, Pa.: Dowden, Hutchinson & Ross. 1975.
13. Gittus, E. "Flats, families and the under fives." Routledge and Kegan Paul. London, 1976.
Ravetz, A. "The use of surveys in the assessment of residential design." In Architectural research and teaching, 1(3), 1971. pp.23-31.
14. Campbell, D. "Degrees of Freedom and the case study." In Comparative Political Studies, 8, no.2, July 1975. pp.178-193.
15. Marans, R. 1975. op.cit. pp.119-179.
16. Robinson, I., et al. "Trade-off Games." In Michelson, W.(ed.). 1975. op.cit. pp.79-118.
17. Wilson, R. 'Livability of the city: attitudes and urban development.' In "Urban growth dynamics." F.Chapin and F.Weiss (eds.). New York: John Wiley & Sons, 1962. pp.359-399.
18. For more information about other design games, it would be instructive to consider a book by Sanoff, H. "Design games: playing for keeps with personal and environmental design." William Kaufman, Los Altos, 1979.
19. Robinson, I. 1975. op.cit. pp.79-118.
20. Canter, D. "Architectural psychology." Proceedings of the conference held at Delandhi, 1970. pp.11-18.
21. Michelson, W. 1975. op.cit. and also Zeisel, J. 1984. op.cit.
22. Brolin, B. "Chandigarh was planned by experts, but something has gone wrong." Smithsonian, 3, no.3, June 1972. pp.56-63.
23. Lawrence, R. 1987. op.cit.

24. The word perception has been used with different meanings. Sometimes it refers to the sense of seeing and sometimes it is used for knowing and evaluating and thus becomes confused with cognition and evaluation of the environment. In order to distinguish between these terms, Rapoport (1977) exemplified them in particular situations:

1-Environmental perceptions: It is the direct sensory response to things and places. It is a direct experience which involves an individual in a specific environment.

2-Environmental cognition: It describes the way people understand the environment with the information coming from indirect way.

3-Environmental evaluation: It refers to the judgment we make about our environment with relation to its quality.

Although these terms could be separated and distinguished from each other in theory, in reality this does not happen. For instance, when we try to find our way in a city, all perceptual, cognitive and evaluative aspects come together without any distinction between them. Besides, it is interesting to mention that most people 'see' in an evaluative way. There is relatively simple experiments which can be verified by everybody and which could reveal this fact of 'seeing in an evaluative way'. If one asks somebody to describe a place, one will see that in their descriptions people evaluate the place for being appropriate for some activity, for being of a great aesthetical value and so on. This example reinforces the idea that people perceive and make judgments, based on their experiences, values and expectations, rather than on an objective knowledge, and then that perception, cognition and evaluation form in the mind of the individual a continuous process. Culture has a quite determinant role in linking the sensory input from the environment with the experiences stored in the human memory and thus different emotional reactions and behaviours result.

25. Rapoport, A. 1977. op.cit.

26. Due to the special context of the study (an Islamic country where privacy rules are still quite strict), a great care had to be taken not to use any method or measurement device without prior authorisation. Furthermore, the researcher herself does not agree with methods which do not respect people's integrity and privacy.

27. Zaisel, J. 1984. op.cit.

28. Peil, M. "Social science research methods." Hodder and Stoughton. London. 1982.

29. Ibid.

30. The dinar is the Algerian currency; one pound sterling equals about 7.805 dinars (DA).

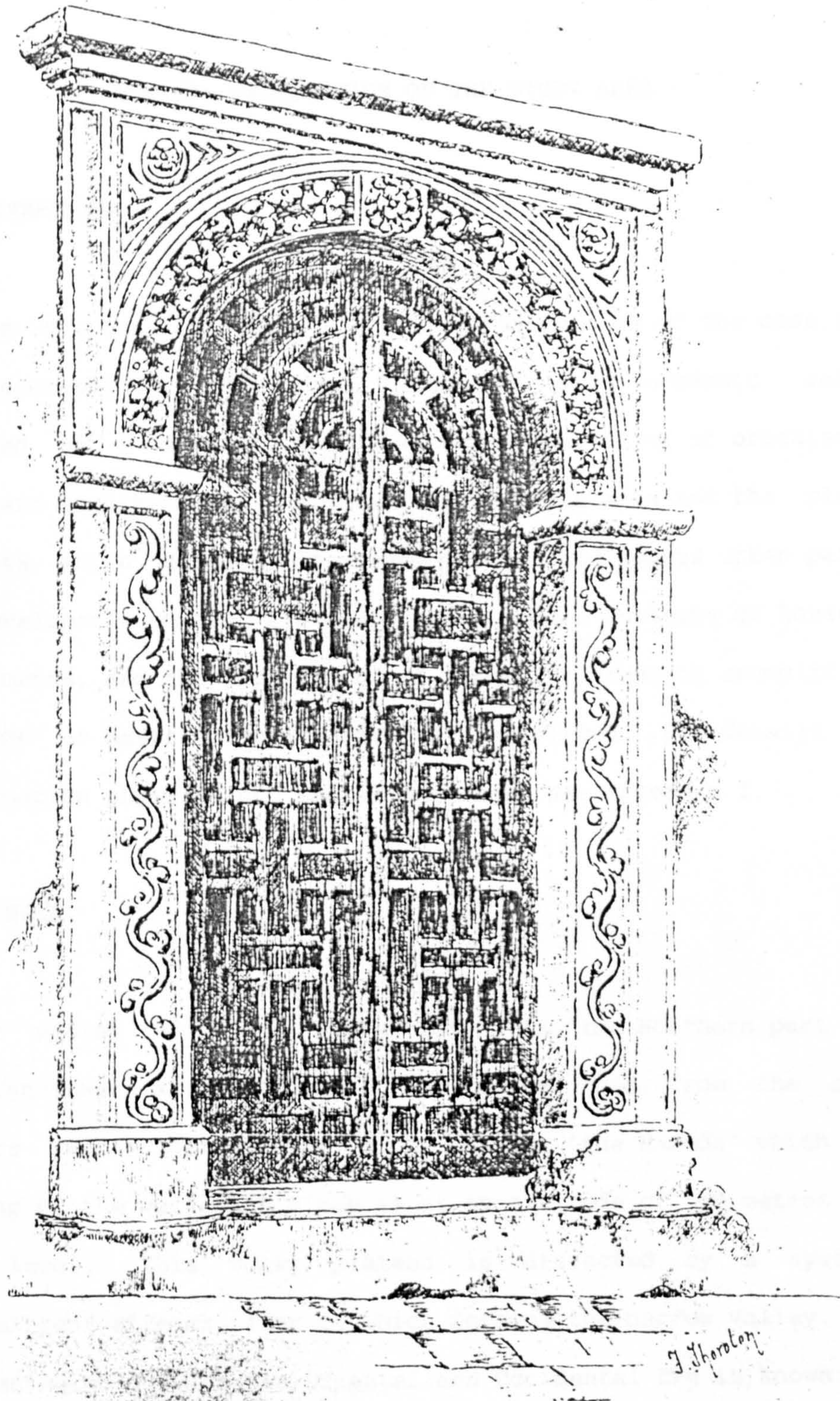
Notes related to table (3.1):

1. Lansing, J., Marans, B., and Zehner, R. "Planned residential environments." Ann Arbor, Mich.: Report prepared for the U.S. Department of Transportation, Bureau of Public road, 1970.

Notes related to table (3.2.):

1. Moore, R. "Children at Play." Cited by Zeisel, J., 1984. op. cit.
2. Blau, P. "The research process in the study of the Dynamics of Bureaucracy." Hammond, 1964, 1967. Cited by Zeisel, J. 1984. op. cit. p.117 and p.207.
3. Gans, H. "The levittowners." New York. Free Press, 1962.
4. Barker, R. "Ecological psychology" Stanford, Calif.: Stanford University Press, 1968.
5. Ittelson, W., Rivlin, L., and Proshansky, H. 'The use of behavioural maps in environmental psychology.' In Proshansky, H., Ittelson, W., and Rivlin, L. (eds.). "Environmental psychology: Man and his Physical setting, New York: Holt, Rinehart & Winston, 1976.
6. Ittelson, W., et al. 'The environmental psychology of the psychiatric ward.' In Proshansky, H., et al. (eds.). "Environmental psychology." New York: Holt, Rinehart & Winston, 1970.
7. Hansen, W., and Altman, I. "Decorating personal places: a descriptive analysis." Environment and Behaviour, 1976, 8. pp.491-504.
8. Davis, G., and Ayers, V. "Photographic recording of environmental behaviour." In Michelson, W. (ed.). "Behavioural research methods in Environmental design." Stroudsburch, Pa.: Dowden, Hutchinson & Ross, 1975.

CHAPTER FOUR



J. Thorpe

CHAPTER FOUR

GENERAL DESCRIPTION OF THE STUDY AREA

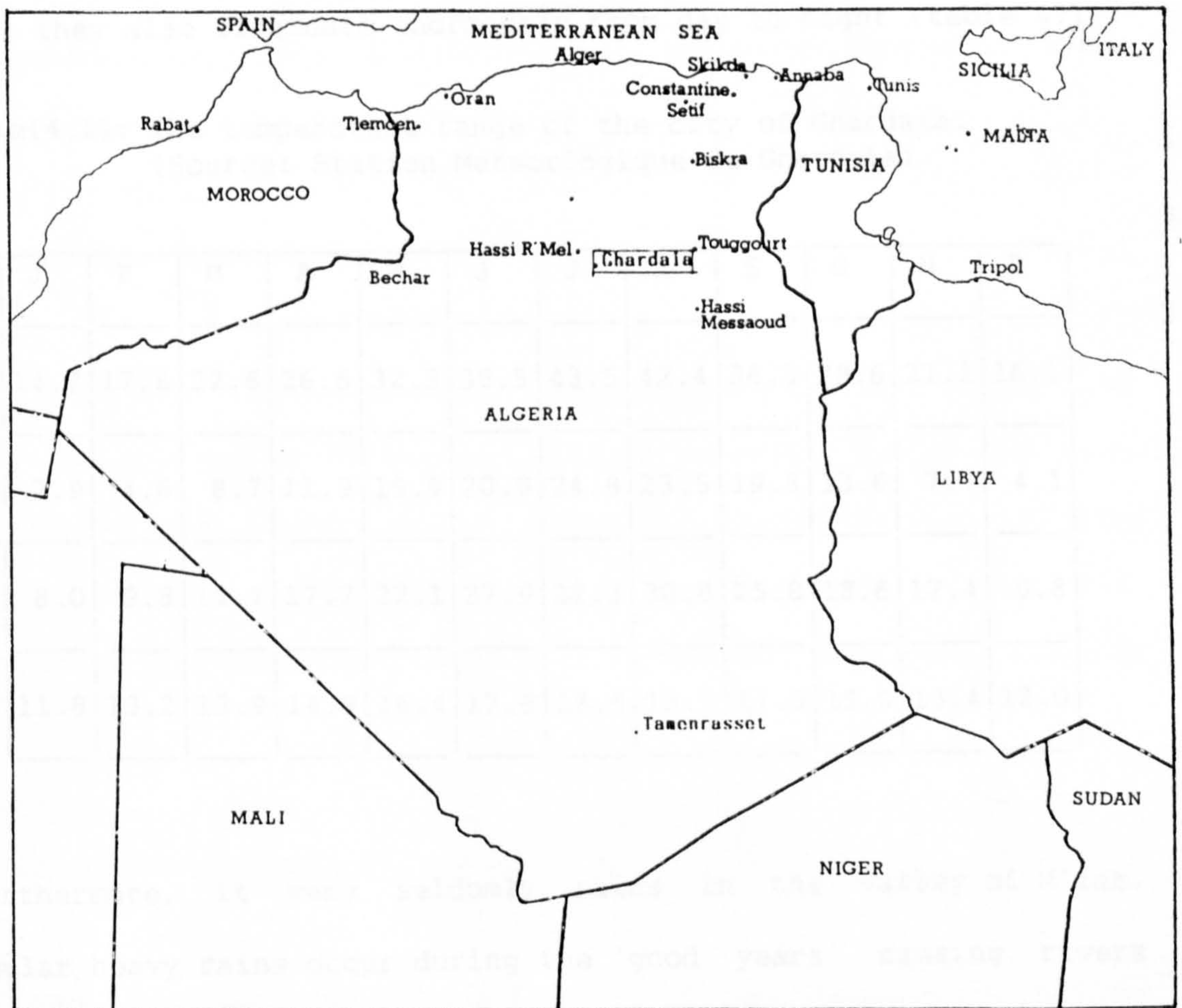
4.1 INTRODUCTION

This chapter consists of a brief presentation of the case study, its geographical, historical, political and economic setting, followed by a detailed analysis of the principles of organisation, urban and architectural characteristics of the area and the planning concepts which directed its development. Indigenous urban patterns and development control are compared to modern patterns of houses and settlements, and the application of normative planning exemplified by the 'PDU' or master-plan is critically appraised. For details about the Algerian physical and social geography see appendix I.

4.2 THE SITE

The valley of M'zab is situated in the Northern part of the Algerian Sahara at a distance of 600 km by road from the capital Algiers (Plate 4.1). The rocky plateau 'the Hamada' which is the setting of the valley of M'zab is at an altitude of 500 metres above sea level. This rocky plateau is dissected by a system of intermittent streams, four of which forming the narrow valley. This plateau which divides the Oriental and Occidental Erg is known as the 'shebka' (the net).

Plate 4.1: Situation of Ghardaia



4.3 THE CLIMATE

The valley of M'zab is characterised by harsh climatic conditions. Indeed, in the arid climate of the desert, not only are the temperatures drastically different between the winter and the summer season, they also fluctuate enormously from day to night (table 4.1).

Table(4.1): The temperature range of the city of Ghardaia.
(Source: Station Meteorologique de Ghardaia)

	J	F	M	A	M	J	J	A	S	O	N	D
Maxima Means	14.7	17.8	22.6	26.6	32.3	38.5	43.5	42.4	36.5	28.6	21.1	16.1
Minima Means	2.9	4.6	8.7	11.9	15.9	20.9	24.8	23.5	19.5	13.6	7.7	4.1
Daily Means	8.0	9.8	14.7	17.7	22.1	27.9	32.3	30.8	25.8	18.6	17.4	8.8
Diurnal Range	11.8	13.2	13.9	14.9	16.4	17.6	18.6	18.5	17.0	15.0	13.4	12.0

Furthermore, it very seldomly rains in the valley of M'zab. Irregular heavy rains occur during the 'good years' causing rivers and streams to flood. Those occasional floods are very welcome in such an arid zone, since they feed the underground galleries and provide the area with water. The extremes registered were 120.5mm/annum for the maximum and 20mm/annum for the minimum, with an average of twelve rainy days per year.

The relative humidity of air, which is of great importance for human comfort, fluctuates with the air temperature between 70% from October to February and 50% from March to September. Among the most common winter winds is the North-West one which brings with it the winter rain. The summer winds (North-East) are very dry, specially the famous 'Sirocco'. Sand storms occur during the months of March, April, and May.

4.4 THE WATER SYSTEM

The 'Wadi' (small rivers) of the region are dry most of the time, this has led the Mozabites (Habitants of the M'zab) to establish an important and clever irrigation system. The underground galleries which are fed by sporadic floods, also run downhill so that they drain the humidity of the soil on their way, and supply an average of 1000 wells [1].

4.5 HISTORICAL BACKGROUND

The 'Ibadhites' who are the founders of the settlements of the valley of M'zab belong to the 'Shismatic' sect of Islam. This religious 'shisme' appeared in the sixth century under the 'Khalifa Ali' [2], in the name of a better application of the Qur'an, and determined the formation of a group of dissidents called the 'Kharedjites'. Persecuted, they moved from Iraq to North-Africa. There, they split into two tendencies the Sophistes and the

Ibadhites- By the ninth century, the Ibadhites converted to their doctrine three quarters of the Maghreb (Algeria, Morocco and Tunisia). However, they were fiercely fought by the Khalifa(s) and were forced to retreat to the cities of Tahert, then Ouargla and Sedrata . This latter was on a trade route and began to flourish very quickly, attracting the envy of the squattered nomadic tribes. The persecutions continuing, the most sectarian group organised the definitive move towards the remote area of the M'zab away from the trading routes and under harsh conditions. There, they founded El Attef in 1012, and then successively Bounoura in 1046, Ghardaia in 1048, Beni-Isguen in 1347 and Melika in 1350 [3]. Outside the valley, but still Ibadhite settlements, are the cities of Guerrara and Berriane founded respectively in 1630 and 1688 as a result of internal conflicts which led to the exclusion of rival groups [4].

Since the first establishment in the tenth century until the fourteenth century, the M'zab seems to have been inhabited only by Ibadhites. In the late fourteenth century they started to accept in their cities people who did not share the same religious beliefs.

Turkish occupation of Algeria, was restricted to the North; however the Mozabites were compelled to pay annual taxes to the Turkish Governor [5]. The French themselves arrived to the South only twenty years after they conquered Sidi-Ferrudj (Algiers) in 1830 [6]. In 1852 the then Governor of Algeria, the Comte Randon, asked the Mozabites to surrender. On 19th April 1853, a convention

ratifying the submission of the Mozabites to French rule was passed. And the Mozabites agreed to pay an annual tax in return for the respect of their now restricted autonomy [7]. However, in 1882 the General Tirman decided to occupy the M'Zab and declared its annexion on 30th November 1882 [8]. Following this occupation, a new administrative structure was imposed, and military bases were built.

4.6 DEMOGRAPHIC STRUCTURE

The demographic evolution from 1888 to 1973 shows a rapid increase in the population from 1954 when the exploitation of oil attracted important manpower (graph 4.1). Indeed, because of its proximity to Hassi-Messaoud and Hassi Hassi-Rmel the two main oil bases, the M'zab became an important centre of transit.

4.7 SOCIAL AND POLITICAL STRUCTURE

The traditional structure of the Ibadhite society is characterised by the theocracy of its government. The mosque which symbolises it, dominates the city ; the 'sheickh' (head) is a religious chief, as is the 'cadi' (judge) who judges on the Qur'anic Law. Public moral behaviour is severely regulated by the 'Azzaba' (clergymen) who have the power of excommunication. The civilian population is strongly structured by family, clan, tribe and 'Soff'. The family is of the patriarchal type and it is directed by its eldest member who controls the behaviour of the group. The nuclear family is monogamous since

the strict application of the Qur'an makes polygamy very difficult. There are however some cases of polygamy but they are considered as exceptions (e.g., infertility of the first wife). Repudiation is also very rare, the husband in that case provides the infertile wife with a separate house and maintains her financially. Very often, the infertile wife continues to share the same house as her husband and his new family.

Families of a common ancestor group themselves in a fraction or 'Achira'. The 'achira' is the basic administrative unit. It has its own budget and owns land and other properties or 'Habous'. These properties can be used equally by all members of the 'Achira' but cannot be transferred nor sold. Each 'Achira' elects a representative usually the eldest male member called 'mokkadem' who represents them at the community assembly or 'Djemaa'.

There are two different 'soff(s)' to which a 'Achira' can belong. These can be compared to political parties. Each 'Achira' has the choice of joining one or the other 'Soff'. Depending on its views and opinions, a 'achira' can change from one 'soff' to the other, but there is no individual choice. Thus, the basic rule in the social organisation is that individuals have to obey and act upon the extended family decision. Each of these two 'Soffs' is represented at the community assembly. Each year, the 'Mokkadem(s)' have the duty to elect a 'Hakkem', a sort of leader who would take the executive seat. His duty is to establish order and promote the well

being of the community. Each year elections occur and the 'Hakkem' is chosen from one of the different 'Soffs'. If in the first year, the 'Hakkem' is chosen from 'Soff' A and his assistant from 'Soff' B, in the following year, the 'Hakkem' will be chosen from 'Soff' B and his assistant from 'soff' A, (diagram 4.2). However, the election campaigns were not always peaceful and disputes between two 'soff(s)' have very often led to civil wars and sometimes to the exclusion of a 'soff'. In such circumstances were born the two towns of Guerrara and Berriane.

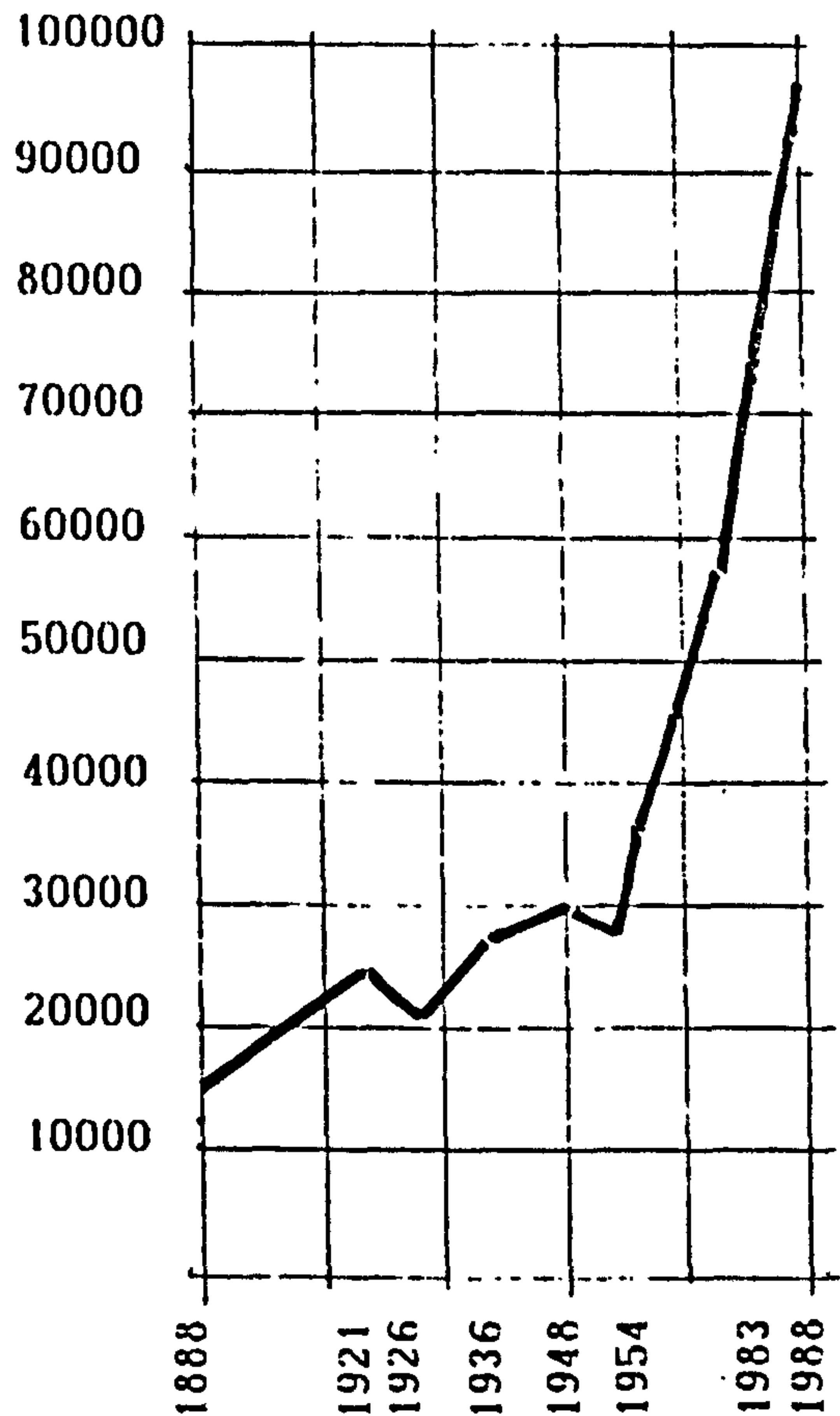
4.8 ECONOMY

By tradition the M'zab has its economical vocation in the primary and tertiary sectors. The extension and maintenance of the palmgrove, vital to the survival of the population, and the commercial activity traditionally exercised by the Ibadhites, could be seen as the main reasons for such predominance. However, since the development in 1970 of an industrial zone, the secondary sector has started to expand.

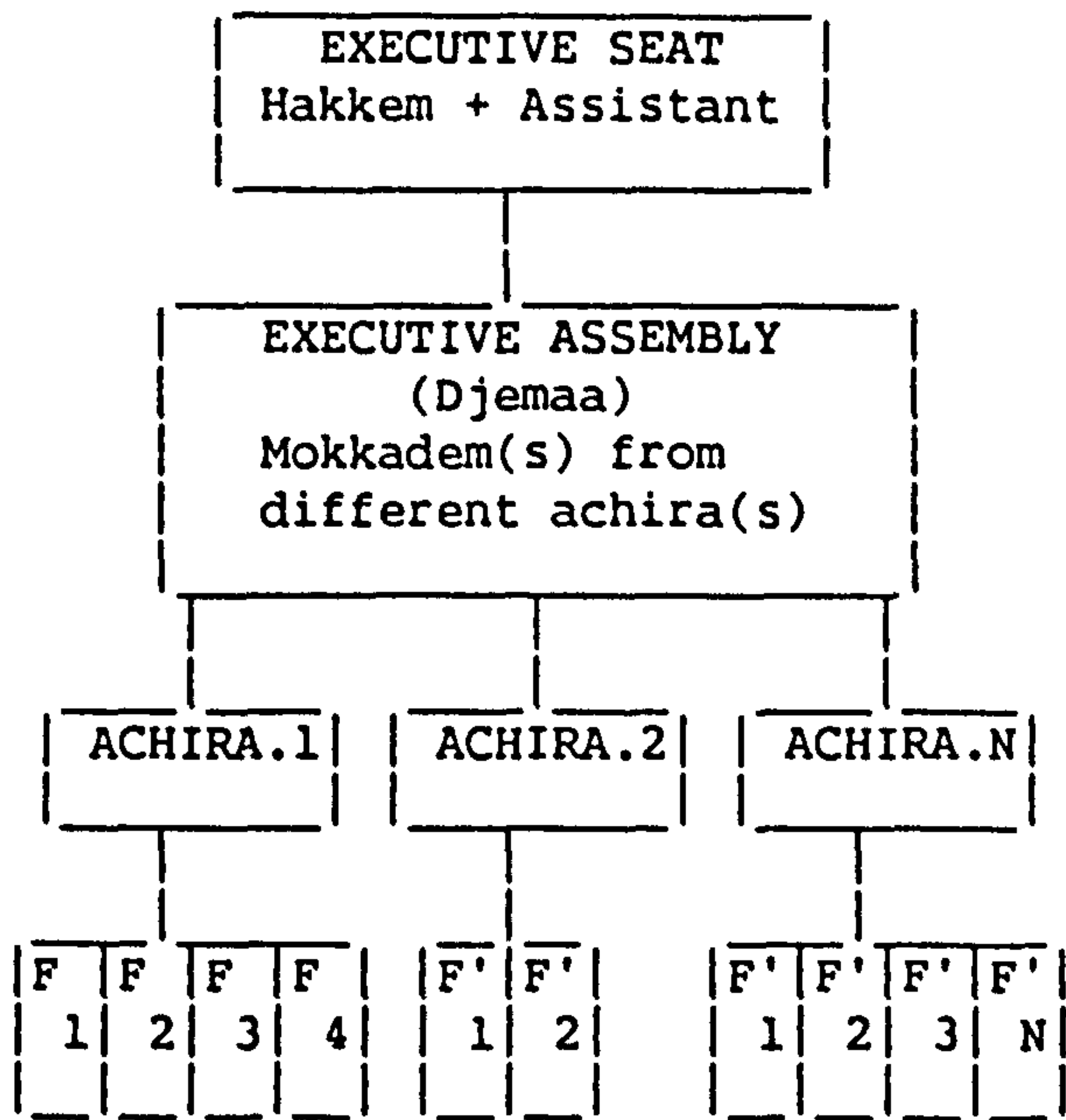
4.8.1 The primary sector

The cultivated land (870 ha in 1972) is in expansion. The palm tree is the main culture (105,000 palm trees in 1972, with an annual production of 1,000 tonnes of dates per year). There is also the culture of vegetables and fodder. Rearing consists mainly of goats

Graph(4.1): Demographic evolution (1888 - 1988)
(source: PDU Ghardaia)



Diagram(4.1): Social and political structure.



and chickens. Three thousand five hundred (3,500) people are employed in the primary sector [9].

4.8.2 The secondary sector

In 1972, the most important economic sectors were building and small enterprises as shown in table(4.2) below:

Table(4.2): Classification of the differrent secondary sectors

Industry	189
-----	-----
Small enterprises	482
-----	-----
Energy and water	146
-----	-----
Building	527
-----	-----
total	1,344

4.8.3 The tertiary sector

Table(4.3) below gives the distribution of the workforce employed in this sector.

Table(4.3): Classification of the different tertiary sectors.

Commerce	1,307
-----	-----
Traffic, information	269
-----	-----
Credit, insurances	24
-----	-----
Private services,	
-----	-----
tourism	152
-----	-----
State, administration	921
-----	-----
Total	2,673

Nearly half of the persons employed in this sector are in commerce which is the traditional occupation of the Beni-M'zab. The public sector is also very strongly represented. Even at the time when the Mozabites first settled in the M'zab, their economy was of a commercial bent. This manifested itself first in Saharan trade, and then when this declined around the fourteenth century, in setting up many trade links with the North, which brought to the valley 70% of the population's income [10].

The industrialisation of the Sahara and the oil caused a considerable growth in the economy activity of the valley, since it is close to two important oil fields of Hassi-Messaoud (240 km) and the gas fields of Hassi-Rmel at 40 km, (see plate 4.1). A large number of workers were drawn into the area when these fields started, and Ghardaia became a transit centre. As a result an important area of business developed, with large firms and garages .

4.9 THE URBAN SETTLEMENTS

'The shebka' of M'zab lies in the East-West direction of the Daya-Ben-Dahoua to El-Attef a distance of thirty (30 km), and covers an area of four thousand square kilometers (4,000 sq.km). Today, the traditional settlements or 'ksours' (El-Attef, Bounoura, Beni-Isguen, Melika, and Ghardaia) still dominate the valley, despite the development of many new quarters (fig 4.1).

Fig(4.1): General view of the valley of M'zab



The traditional settlements still dominate the valley.
Each settlement has a mosque characterised by its
minaret in obelisque shape.

In the early twentieth century, the French extended the main city of Ghardaia, and the new quarters which they developed along the main road are mainly constituted of rich villas surrounded with gardens. The last quarters erected from 1952 to 1958 are Dada Ali and Mermed on the left bank of the M'zab River, Baba Saad, El Ain and Melika Bas on the right bank, along the axial main road on either side of Ghardaia. Those three latter form a linear city of four kilometers (4km) length, and are quite different from the old settlements. Indeed, whereas, the old cities were constructed mainly on the saddles of the hills and were crossed by narrow and winding streets, the new extensions have occupied the flat land and are of a regular plan, with linear wide streets.

The social component of the area has also changed, and whereas in the past the area was predominantly an Ibadhite centre, now the Malekite element has increased to the extent that it has almost outnumbered the original population [11]. The valley which has had in the past the special characteristic of being inaccessible, is now on the major road to the Sahara desert. It is situated at the cross-roads between the North and the remote South, and the oil and gas fields further South have contributed to its growth even further. Initially, people lived in the 'Ksar' (singular of ksour) in the winter and in the palmgrove in the summer; today one can identify four different zones:

1. The 'Ksour': They are the traditional settlements with a very tight structure, these are: El-Attef, Beni-Isguen, Bounoura,

Melika, Ghardaia.

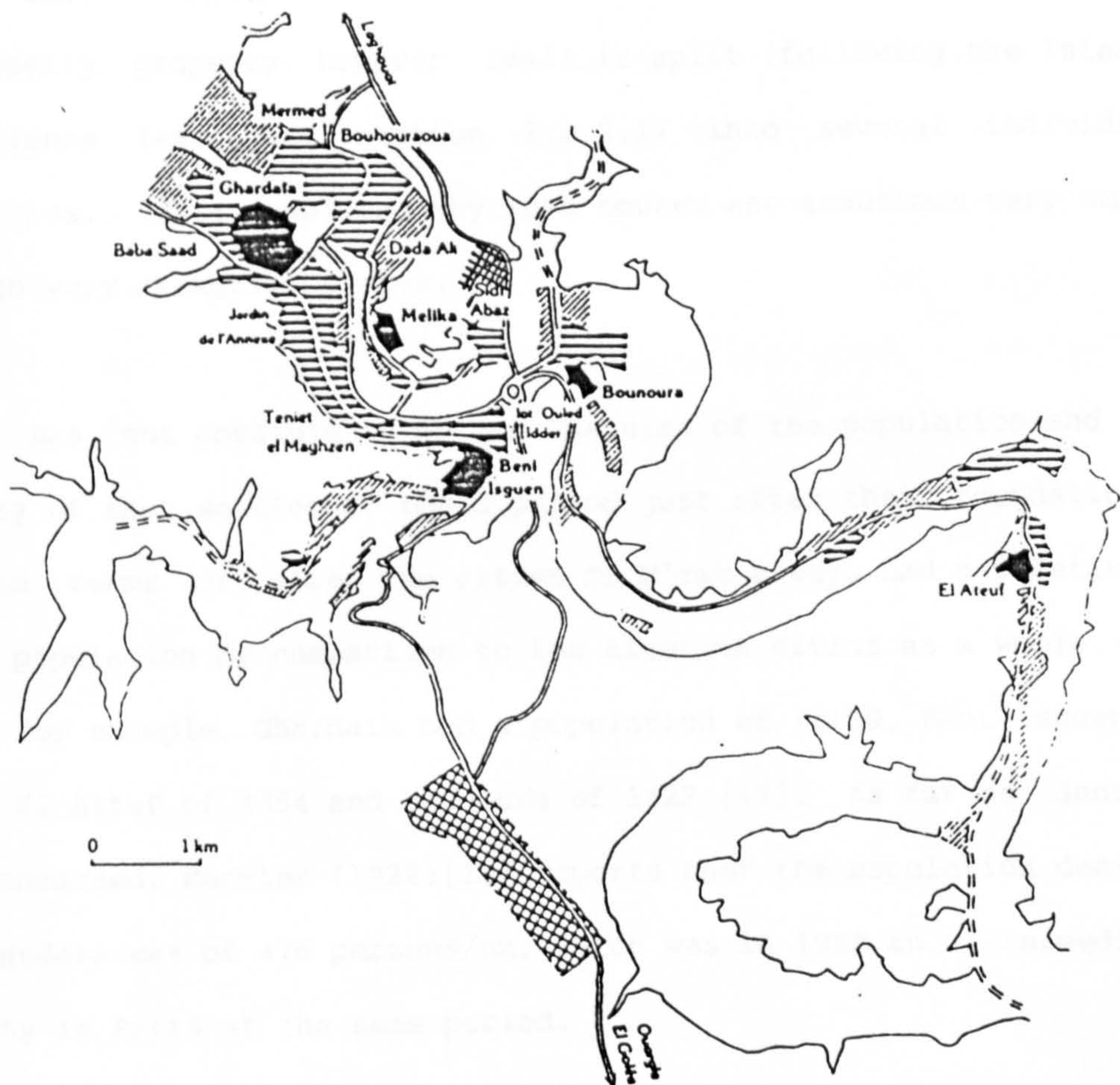
2. The new extensions zones: These are the direct extensions of the 'Ksour' and are strongly related to them as they encompass the public urban elements and facilities such as sport halls, and public schools which are used by the 'ksar'. These extensions follow the same construction principles as the traditional old settlement but with a much lower density.
3. The area of the 'Jardin l'Annexe': It is mainly a European residential quarter, it is also the administrative centre.
4. The ZHUN (zone d'habitation urbaine nouvelle): They are the new planned and mainly subsidised residential areas, characterised by a high concentration of housing (plate 4.2).

4.9.1 PLANNING CHARACTERISTICS OF THE INDIGENOUS SETTLEMENTS





The creation of the Mozabite settlements was not the result of an accident. The creation and the development were deliberate choices made by people having a long urban experience (they built Tahert, Ouargla, Isadraten (see paragraph 4.4). The foundation of a new settlement was generally a decision taken by a number of religious men, the 'halga', themselves directed by a kind of religious chief [12]. The number of men involved in the foundation of the new city was small but each of these clergy men would bring with him his 'achira'. Each 'Achira' was allocated a plot of land and was responsible for its distribution among its members or heads of the

Plate(4.2): THE VALLEY OF M'ZAB AND ITS
DIFFERENT CITIES

source: Universite de Tours(1982)



KEY

-  Traditional Settlements
-  Jardin l'Annexe (European Style)
-  New Housing Zones
-  Extension of the Old Settlements

extended families. The land so allocated belongs to the new family and its descendants. This family has the exclusive rights to use it. When the head of the family dies, the power is transferred to his eldest surviving son, who will have to manage the family property. In the case of misunderstanding or conflicts among the inheritors, the family property however small is split (following the Islamic inheritance laws, see section 2.3.2.1) into several individual properties. This explains why some houses are sometimes very small or with very irregular shapes.

It was not possible to obtain the size of the population and the density of each settlement for a period just after their foundations, but in terms of size, the cities of M'zab always had a relatively large population by comparison to the Algerian cities as a whole. In 1921, for example, Ghardaia had a population of 11159, Beni-Isguen of 6256, El-Attef of 2854 and Bounoura of 1422 [12]. As far as density is concerned, Mercier (1922)[13] reports that the population density of Ghardaia was of 476 persons/ha, which was in 1921 an intermediate density in Paris at the same period.

4.9.1.5 Principles of organisation of the traditional urban settlements

Fearing the nomads' attacks, the Beni-M'zab established their cities on the hills of the area they chose. By building on the hills, they were also preserving the most productive low land which

was always left for cultivation. This was because water, the main means for survival in such a harsh area was much nearer the surface on the low land than it was on the rocky high hills. Therefore, the cities were never allowed to sprawl on the best land.

The first thing they built after the mosque was the walls. This physical barrier established the limits beyond which construction was not possible, and was a real barrier necessitating, eventually the foundation of a new city somewhere else. So the walls of the city were a physical barrier restricting the city and urban sprawl, and Ghardaia which has always been the biggest centre acted as the nucleus upon which smaller cities depended. Therefore, one of the most important principles of city planning in the valley of M'zab, is the development of satellite cities.

4.9.1.6 Urban and architectural characteristics

Inside the 'ksar', the texture is very tight. Ghardaia for example has 2000 houses which represent a gross land-occupation of 115 sq.m per house. The construction of the house had itself to fulfil some regulations, such as height and orientation of the openings. It was not permissible to see into the neighbouring houses, or to stop the neighbours from getting their share of sunlight. The houses were to follow some other rules, of a religious character - Nothing in the external appearance of the house should show the wealth of the occupant - This absence of external

decorations meant that no house contrasted sharply with its surroundings [14].

Inside the towns, the network circulation consists of a system of lanes partially covered, accessible mainly to pedestrians. Depending on the topography, they are very often tortuous and steep and the use of stairs is very common. Architecturally, the street is enlivened only by the colour of the walls on which plays the shade and light. The only openings on the facades are the door and sometimes very small windows. Some streets are multifunctional, and are used as extensions of the market and as meeting places. These streets are usually provided with benches. Some others are just through routes to the houses like the dead-ends which very often allow access to only one house. Each city has got a mosque characterized by its minaret in obeliske shape, (fig 4.2).

The economical function of the city is organised around the market place, the 'souk' which takes different forms but is in the majority of cases, deliberately rejected to the periphery of the city. This is done in such a way so that the nomads or strangers who are attracted by the trade do not have to go inside the quarters which are reserved to the inhabitants. The 'souk' expands generally in the neighbouring streets. This enclosed space does not only have an economic role, it is also the only large open public space and thus the meeting place for the population.

Fig(4.2): General layout of the traditional town of Ghardaia.



Cemeteries and palmgroves are outside the city but organised and directed by the city. The cemeteries follow the same organisation as the city: Family, fraction, 'soff'. The anonymity of the houses is also found here where the graves are all similar. Only some graves of venerated sheiks are different and are more or less decorated. The palmgroves are situated near the cities and tend to become real cities of secondary residence. People build more and more houses which they use during the harvest of the dates (from September to November) and more often during the hot seasons because of the relative freshness brought by the palms and the water which is generously used in the gardens.

4.9.1.7 The generator of the city

The generator of the Mozabite city is the mosque, it is the first element to be built in the development of a new settlement. Being the most important element in the city, the mosque like the castle or church in medieval European cities is built on the summit of a hill. In the M'zab because the mosque is the most important element of the city it exerts an attraction and as a result directs the street layout. Furthermore, the mosque qibla wall and its orientation has a significant impact on the hierarchy of building decisions, and on the orientation of all structures containing a prayer area.

The mosque and the medersa (Qur'anic school) which is its ancilliary building, constitute the nodal point of the city. In most

traditional Islamic cities this nodal point is constituted of both the market and the mosque which are built side by side. Another particularity of most early indigenous Islamic towns is to have a mosque for each of the quarters . By contrast, except for El-Attef which has two, all Mozabite cities have one mosque each. The constancy of the Mozabites in building only one place of worship in each city, shows their fear of a religious division which is more likely to happen when there are more than one places of worship. Furthermore, for extreme religious reasons the market which in most Islamic cities is usually next to the mosque has been pushed away. Indeed, the Qur'an elaborates extensively about justice and fairness in commerce, and the Mozabites seem to have preferred to develop the ecclesiastic area away from the commercial zone.

The internal space of a mosque is large and flexible. It is a directional space in which people face the 'qibla', the 'kaaba' in Mecca in Saudi-Arabia (see paragraph 2.3.4). Leaving their busy lives aside, worshippers offer prayers five times per day. Narrow gates in the surrounding walls lead to the internal court, where there are open spaces and shaded arcaded zones. In the mosque's layout the only fixed place is the 'mirhab', the place marking the 'Qibla', and where the 'Imam' stands to lead the prayers. The only fixed piece of furniture is the 'minbar' an elevated pulpit from which the congregational speeches are delivered on Fridays. Rugs and mats cover the floor, emphasising an impressive simplicity. Abstract arabesques and inscriptions from the Qur'an are applied to the walls,

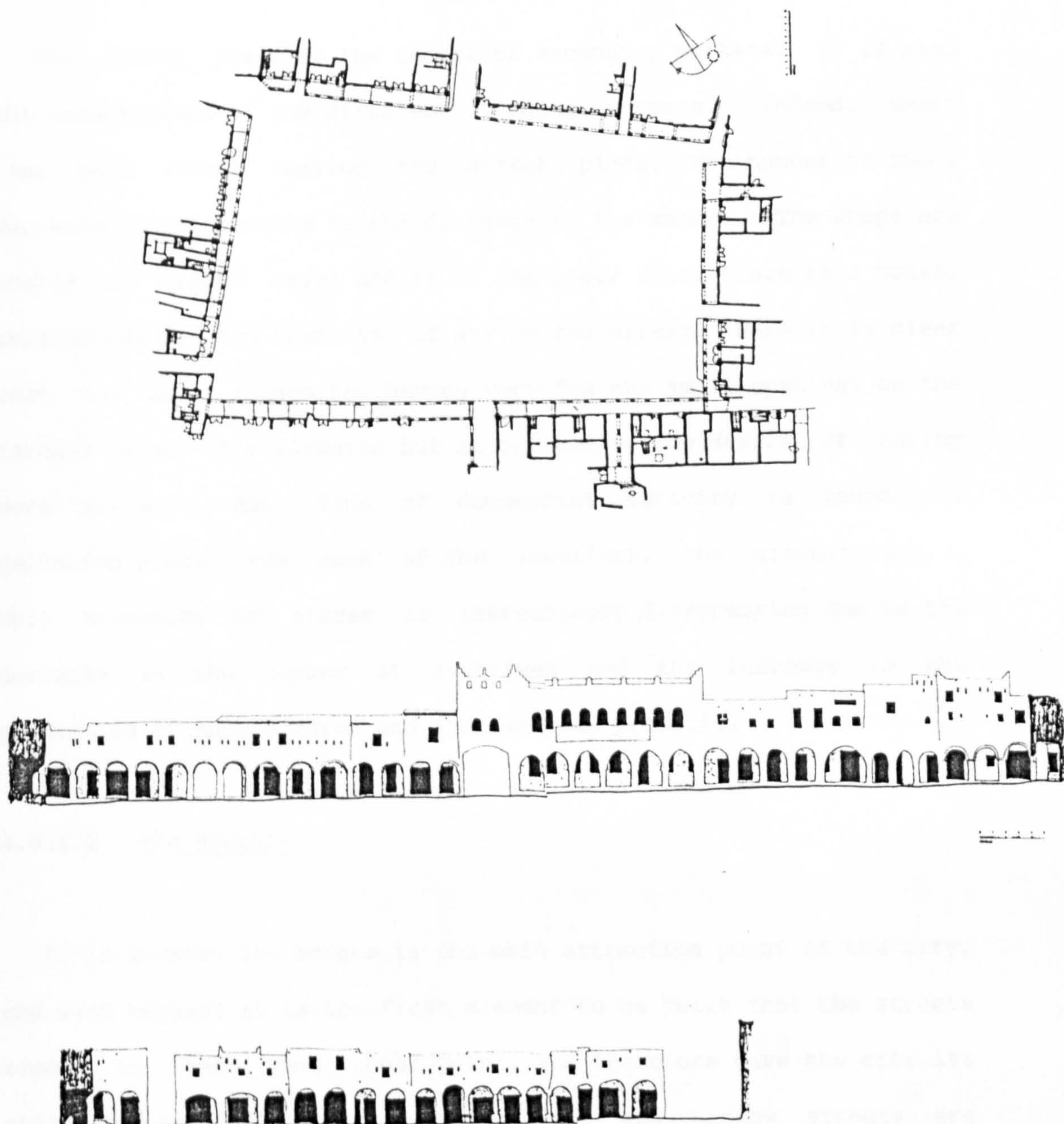
the 'minbar' and the 'mirhab'. Coloured mosaics or marble tiles are used to cover the inside walls. Every mosque has at least one minaret from which the 'muedden' calls announcing the time for prayers. The minaret is usually an impressive architectural element, which can be seen from far away and thus used as a landmark (fig 4.1, and 4.2).

4.9.1.8 The market

Despite the variations in their shapes (each city of the M'zab displays a market place with its own characteristics) the markets in the M'zab share one characteristic, that is they all have been planned at the origin. This is well proved by the architectural unity of the buildings which surround the market place (fig 4.3). As seen in the previous paragraph, the Mozabites deliberately located the market at the edge of the city. The reason for such a choice was not only to push trade away from the ecclesiastic zone, but also because trade tended to attract people from outside the city, and even of the valley.

Besides its economic function, the market is a meeting and administrative place. It was there that the council or the 'djemaa' used to take decisions concerning the well-being of the community. For them was built a 'haouita' which is half an ellipse of five meters (5m) axis formed by stones. Each stone, was according to the tradition, the seat of one member of the 'djemaa' [15]. A covered

Fig(4.3): The traditional market or "souk".



gallery surrounds the market place. All the buildings looking onto the market are shops or warehouses, no dwelling is in direct contact with this public area.

The market place is the centre of secondary markets. It is also the intersection of the different trading streets. Indeed, shops line each street leaving the market place. The number of shops decrease proportionally to the distance to the market. The shops are mostly at ground level and if at the upper floor there is a house, this latter has few openings, if any on the street. Here it is clear that the main reason for having very few and small openings on the facades is not only climatic but associated to the desire of having more privacy. Each type of commercial activity is found in a delimited place - the 'souk' of the jewellers, the greengrocers... This hierarchy of places is increasingly disappearing due to the decrease in the number of craftsmen and the increase in the production of manufactured and standardised products.

4.9.1.9 The streets

It is because the mosque is the main attraction point in the city, and also because it is the first element to be built that the streets tended to reach this nodal point, and therefore gave the city its spider web form (fig 4.2). The winding and narrow streets are however, not only a peculiarity of the M'zab, but a feature of all cities of hot climates. The main characteristic of the streets in

the M'zab cities is that they all follow a hierarchy. From the market to the house, there are different types of streets: The 'Charaa', the 'Tahamelt', the 'driba' and a sort of corridor leading to the house 'the skiffa' (fig 2.2 and 4.4).

The 'charaa' is a major lane publicly used, which puts the quarter in relation to the market, and can be used by the community as well as by outsiders. It is in this kind of street that shops and workshops are found. But these are mostly concentrated in the vicinity of the market place.

The 'tahamelt', the second in the hierarchy, connects the lane to the more private cul-de-sac. This street is the main link to the mosque and is used by the whole community.

As far as the 'driba' is concerned, it is a semi private space which runs into the quarter and is used mainly by the houses of the quarter.

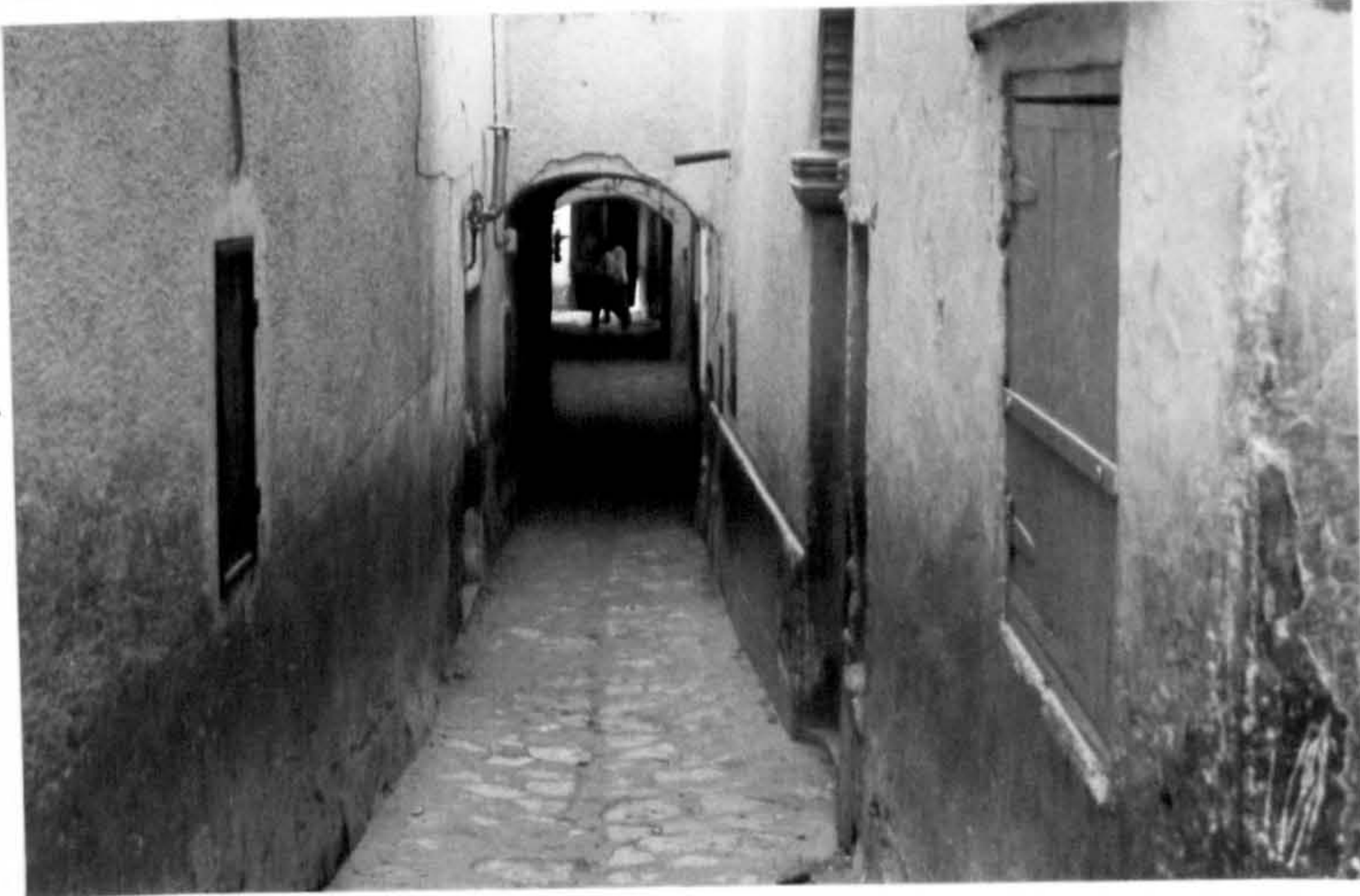
It is onto this cul-de-sac that the 'skiffa' or private space leading to the family's dwelling opens. Therefore, from the market to the family's dwelling where the street system ends on a double bended cul-de-sac, passing through the quarter, there is an increase in privacy in the streets, and a change and specialisation in the functions. The circulation pattern functions as a social control mechanism and the width of the street is directly related to the

Fig(4.4): The three different types of streets in the traditional settlement.

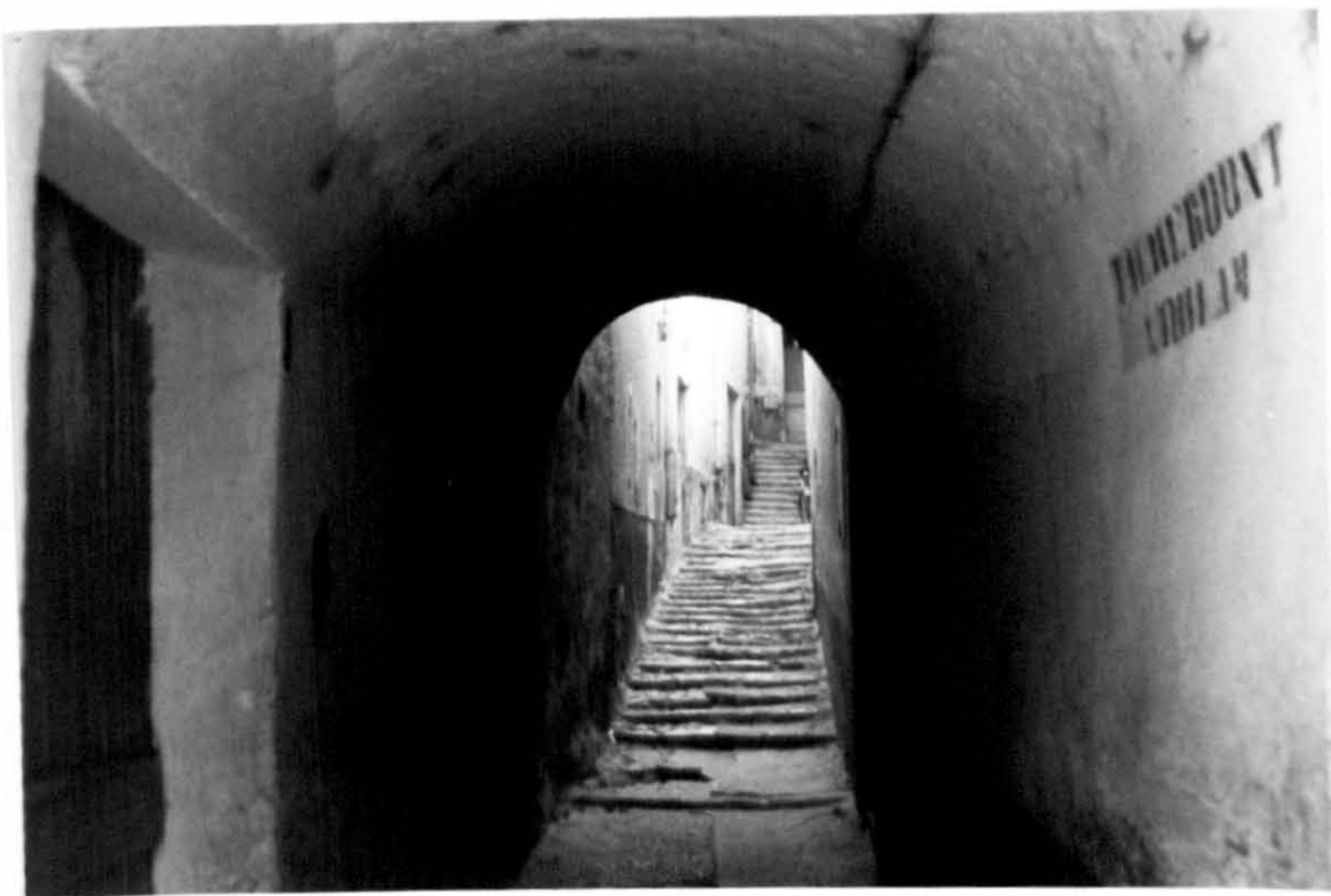
'Charaa'



'Tahamelt'



'Driba'

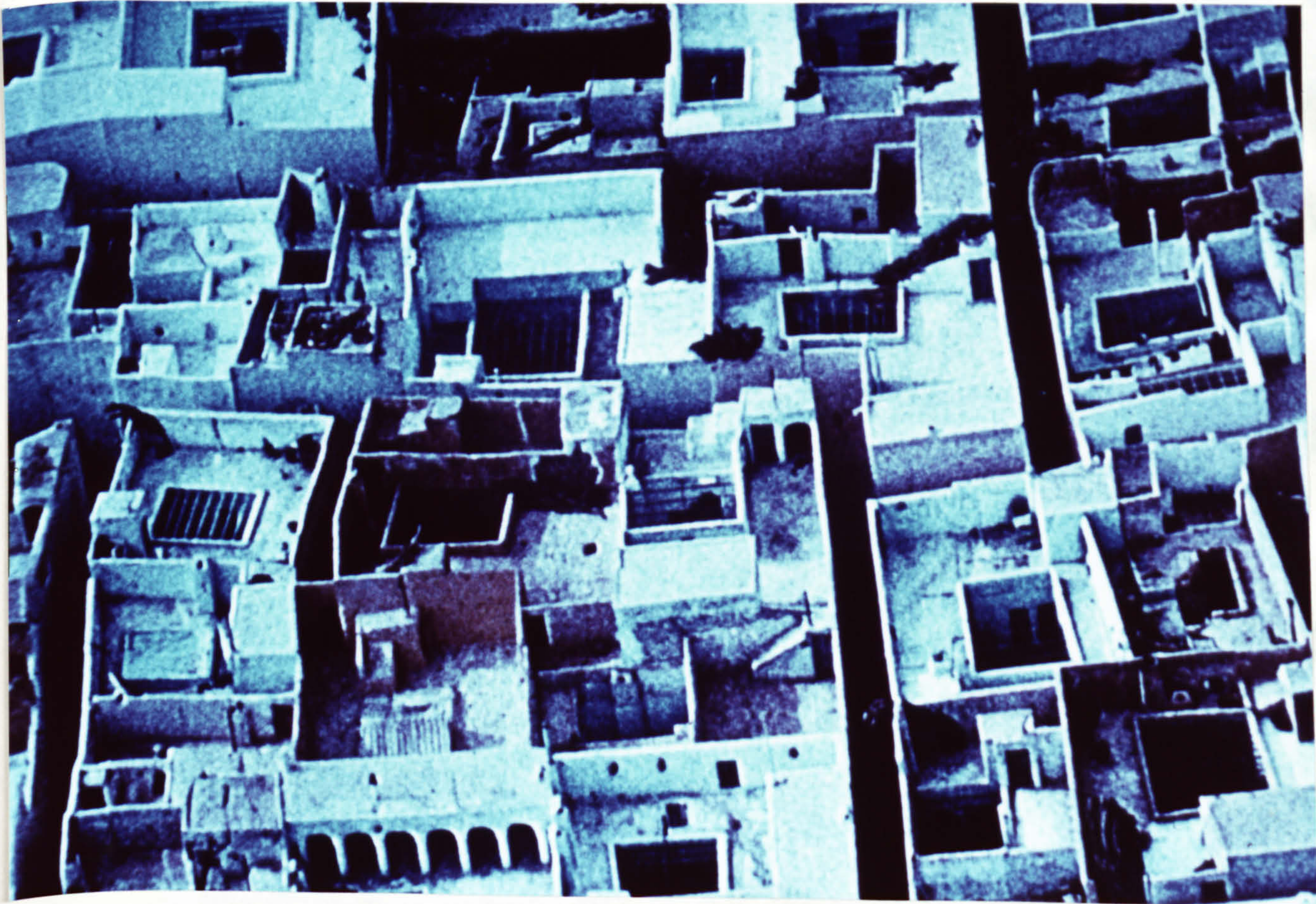


increase of privacy. In addition to the ground level system, for the particular preservation of female privacy, a 'first floor circulation pattern' has been created at roof levels. This circulation network is strictly reserved to women who do not need to cover themselves when going from house to house. This system covers generally a whole quarter and thus keeps the relationship between the members of the extended family quite tight (fig 4.5).

4.9.1.10 The residential area

The residential area occupies the space between the mosque and the market and forms a very tight urban fabric. The compactness of the residential area is planned in such a way as the buildings shade each other mutually. The Mozabite family has a great cohesion, and is at the basis of the social organisation of the city and of course the neighbourhood unit. At the origin of the formation of the Mozabite cities, the dwelling was the realm of the extended family, but whenever a nuclear family of the extended family aspired to a separate dwelling, this latter was always erected near the house of the father. Thus even though the dwelling housed a nuclear family, the different neighbours on a 'cul-de-sac' were descendants of the same ancestors. The residential area included many small retail shops and especially workshops, where most women of the neighbourhood bought wool or exchanged carpets, and other woven products against raw material, and other varied items such as shoes, copper trays, and even jewellery. Plate(4.3) shows the location of the residential area

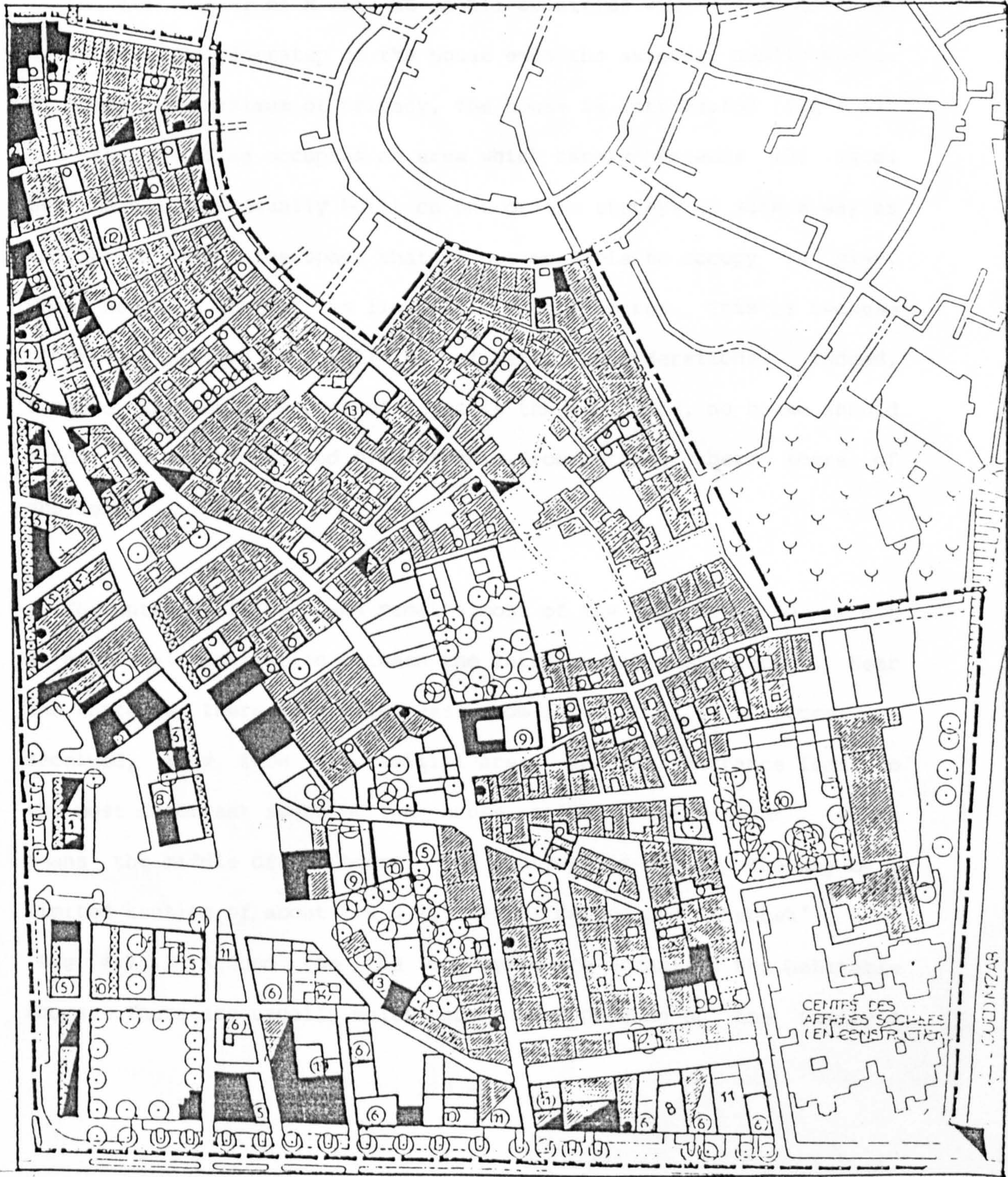
Fig(4.5): The second level 'women only' circulation network.










Women can circulate from house to house using the terraces, devices such as openings in the party walls, ramps and even stairs ensure accessibility to most houses of a block. Sometimes, even the blocks are joined by small bridges over the streets.

CHARRADA

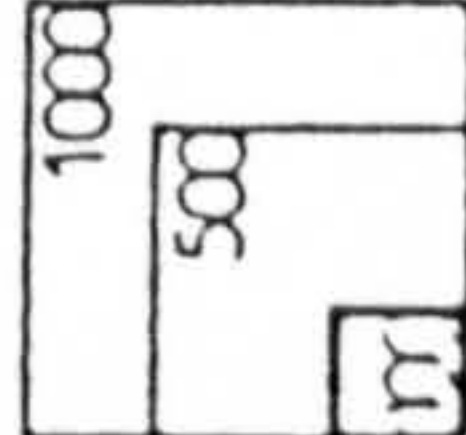
-Land use Map-



KEY

- | | |
|---|------------------------------------|
|  | Dwellings |
|  | Corner shops |
|  | Other commercial activity |
| 1- Rank | |
| 2- Barber | |
| 3- Laundry | |
| 4- Bakery | |
| 5- Offices | |
| 6- Cafe shop | |
| 7- Military building | |
| 8- Warehouse | |
| 9- Hammam | |
| 10- Hotel+Restaurant | |
| 11- Garage | |
| 12- Carpenter | |
| 13- Mosque | |
| 14- Others | |
|  | Dwellings+shops on ground floor |
|  | Dwellings+offices |
|  | Workshops (shoe making weaving) |
|  | Quartier des Anciens Moudjahidines |

METRES²



METRES



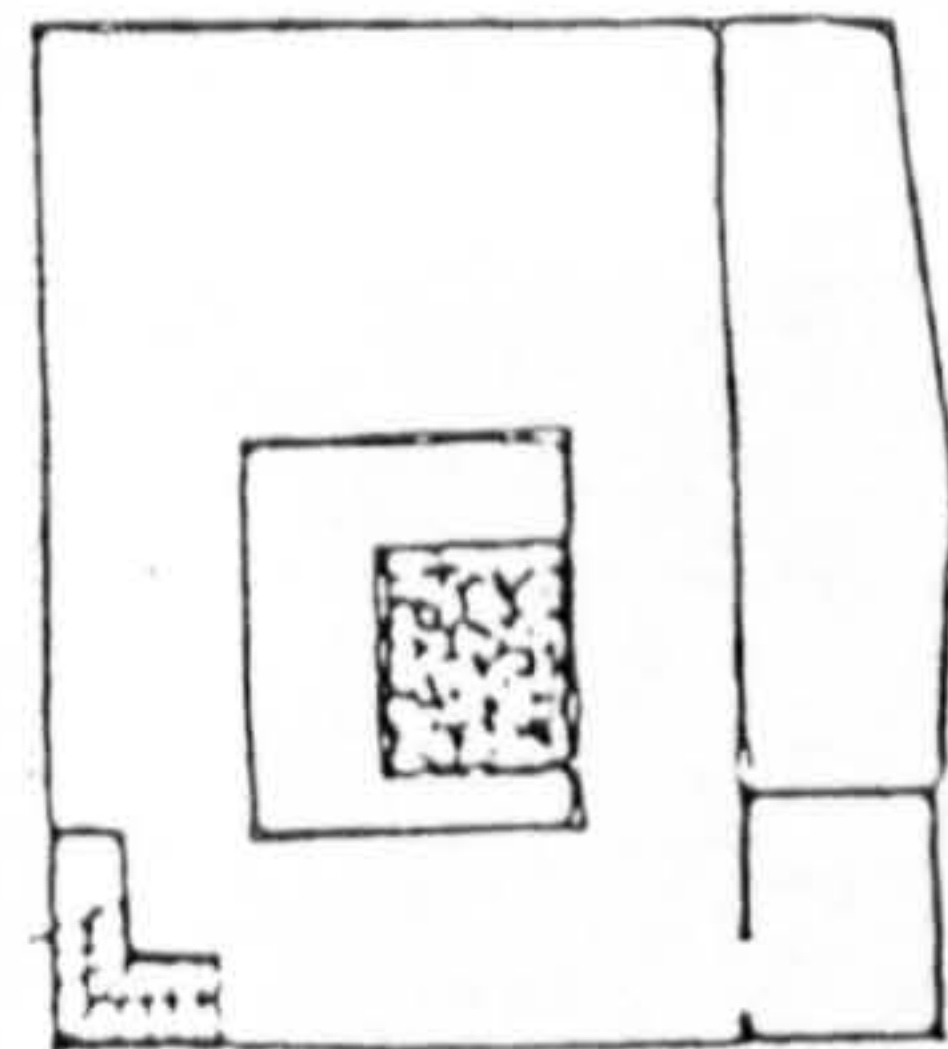
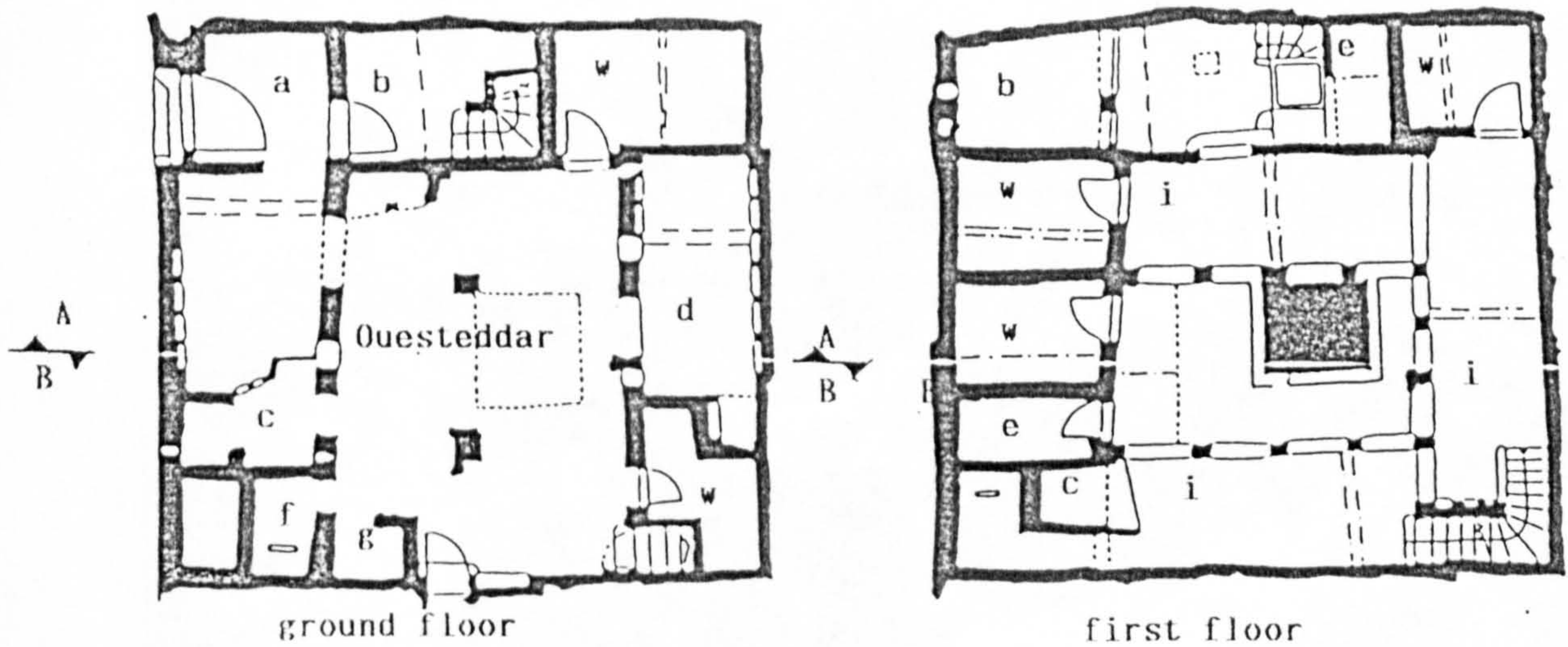
selected for the case study, and gives details about the different land-uses.

4.9.1.11 House design and layout

In the valley of M'zab, as in all countries where Islam dictates daily life, the doorstep of the house ends the external public world. To give the maximum of privacy, the house is introverted (fig 4.6). The urban dwelling occupies an area which rarely exceeds 100 sq.m. But the house is usually built on one or two storeys in such a way as to gain in height the space that is not possible to occupy on plan. This height, however, is limited to 7 or 9 metres. This is because of privacy matters as well as climatic considerations. Indeed, because the only source of light is the courtyard, no house should hinder its neighbours and prevent them from getting their share of sunlight.

The entrance is bent and remains most of the time open, to permit a continual ventilation between the interior and the exterior. Near the entrance, there is a male guest room in which male visitors are received, away from the familial area. The bent entrance leads to the most important space of the house called 'Ouest-eddar', which means the middle of the house. The courtyard is open to the sky by a limited section of about 1.5 x 1.5 metres called the 'Shebbek' (fig 4.7). Around the courtyard are organised the habitable rooms. These are usually multifunctional depending on the family's

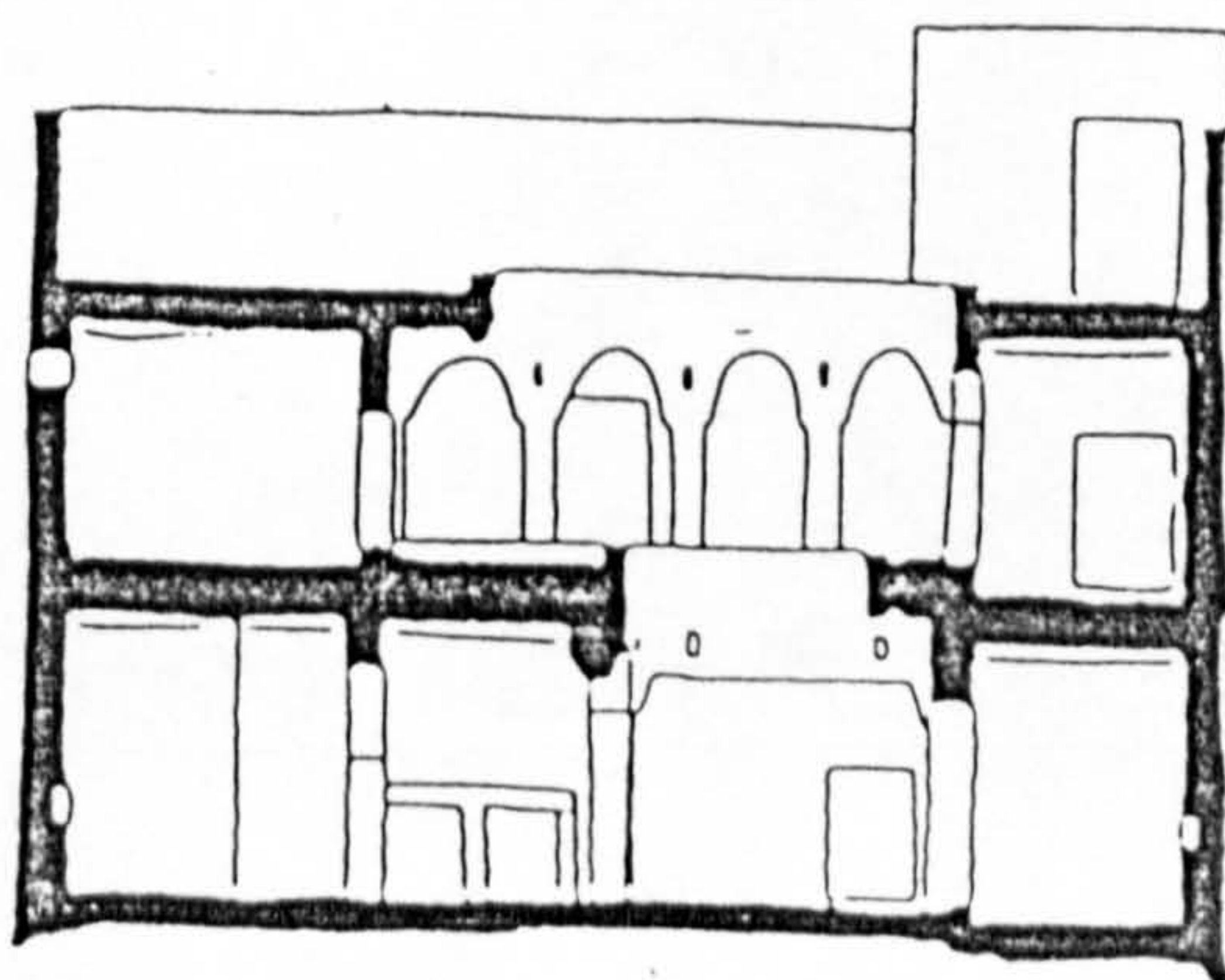
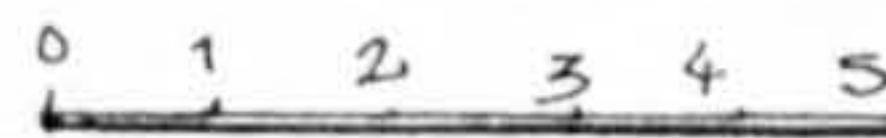
Fig(4.6): Traditional courtyard house



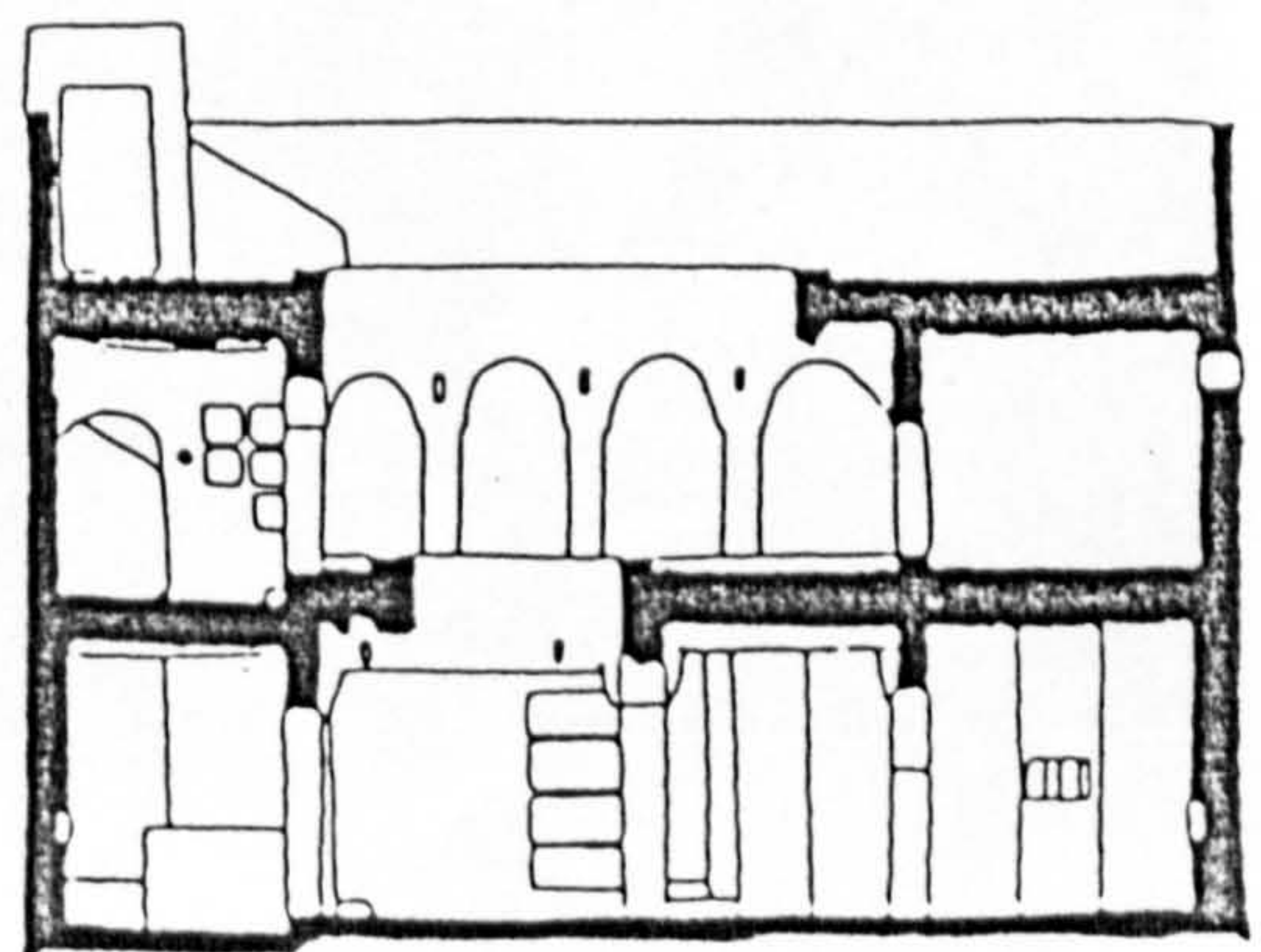
terrace

KEY

- a : entrance or skiffa
- b : male guest room
- c : kitchen space
- d : female guest room
- e : storage
- f : toilets
- g : ablutions space
- h : room
- i : ikomar



section BB



section AA

Fig(4.7): The shebbek.



The courtyard is open to the sky by a limited section of about (1.5×1.5) square meters, called shebbek.



requirements.

The first floor is organised around an open space called 'Ikomar', around which are located other rooms, sometimes a small kitchen for winter use and a toilet/ablutions room. The stairs leading to the roof are also situated in a corner of the 'Ikomar' space. During the day the use of the roof is exclusively reserved for women who use it for domestic activities as well as a circulation system to reach the different houses of the neighbourhood. During the summer period, the roof is used as a sleeping place by the whole family. Generally members of the same extended family live in the same neighbourhood, and the relationships between them are particularly tight. Many architectural devices such as small openings in party walls, or accessibility from the terraces are used to communicate between the houses of a quarter.

4.9.2 Normative planning and the characteristics of the modern settlement of Sidi-Abbaz

Urban planning and development in Algeria is administered on three levels: national, regional, and local.

The 'Ministere de l'Urbanisme de la Construction et de l'Habitat' is responsible at the national level, and is concerned with the preparation and effecting of broad national policy and strategies.

Regional level responsibility for strategic planning is primarily through the 'DUCH' (direction de l'Urbanisme de la construction et de l'Habitat). The 'DUCH' is directly attached to the 'APW' (Assemblée Populaire de la Wilaya).

The 'APC' (Assemblée Populaire Communale) is concerned with local level development in housing, transport, tourism, culture, industry, agriculture and also approval and enforcement of particular statutory planning instruments. The 'APC' is elected triennially by universal suffrage.

4.9.2.12 The 'Plan Directeur d'Urbanisme or PDU'

The 'PDU' is prepared by the 'APC' (assemblée populaire communale). According to 'circulaire C-1 PUD [16] it should be formulated in accordance with the following four-stage model:

Phase 1 : Analysis	8-9 months
Phase 2 : Perspectives	4-5 months
Phase 3 : Propositions	4-5 months
Phase 4 : Plan	3-4 months

And, must include development plans at a scale of either 1/50.000 or 1/25.000 accompanied by written reports. These reports should include analysis of:

1. The physical characteristics of the area, the spatial impact of the 'PDU' on the surroundings, and the available urban expansion zones.

2. The socio-economic characteristics of the area, taking into account demographic trends and employment, housing, educational and infrastructural provision.
3. Projected development within a ten year perspective.

Subsequently, the 'PMU (Plan de Modernisation Urbaine) must be formulated to provide the financial framework for action.

4.9.2.13 The 'PDU' for the M'zab (1973-1988)

It advocates the linear extension of the valley by:

- Developing four satellite settlement poles near Bounoura to relieve the centre (Ghardaia, Melika, Beni-Isguen), between Ain-Lebeau and the Oases of Ghardaia, near the Oases of Ghardaia and that of Daya-Ben-Dahoua.
- Renovating and expanding the existent oases towards the East and West [17].

The 'PDU' itself, zoned the area according to general land use characteristics and perspectives which produced the following zoning:

ZONE

A(I) Traditional housing (Ksour).

A(II) Flats.

A(III) Villa type

A(IV) Cottage in the Oases.

B(I,II) Mixed-Use area encompassing commercial and institutional enterprises central for the economy, such as shops and supermarkets, restaurants, hotels, offices, cultural and social edifices, light industry, dwelling.

C(I) Light industry, industry which does not present any inconvenience to neighbouring land use or public health.

C(II) Heavy industry; all other industries which are not admissible under C(I).

E Public equipments, such as schools, hospitals, offices, mosques.
Services, such as water or electric power stations, abattoirs, sewerage.
Open spaces, such as public gardens, play areas, sport fields, cemeteries.

K(I,II,III,IV) Oases; can include some summer houses or cottages

Table(4.4) is a summary of the detailed development control guidelines for the housing zone:

Table(4.4):

a	b	c	d	e	f	g
A(I)	2	1.5	0.1	0	300	100
A(II)	2	1.5	0.2	0	250	150
A(III)	2	0.8	0.4	0	150	300
A(IV)	2	0.4	0.6	0	80	600

a = type of housing.

b = Number of floors.

c =
$$\frac{\text{Total constructed ground surface area of building}}{\text{Surface area of the building plot}}$$

This coefficient is named the 'coefficient d'occupation du sol' and helps in determining the permitted floor area of the building.

d =
$$\frac{\text{Surface area of the building}}{\text{Surface area of the building plot}}$$
 (plot ratio)

0 = Low density detached density.

0 = Semi-detached dwellings in small clusters.

0 = High density terraced dwellings.

g = Size of the building plot.

f = Density (inhabitants / hectare).

Plate (4.4) illustrates the PDU proposals for the modernisation of the study area namely the 'Quartier des Anciens Moudjahidines'.

CH/ARID/AA

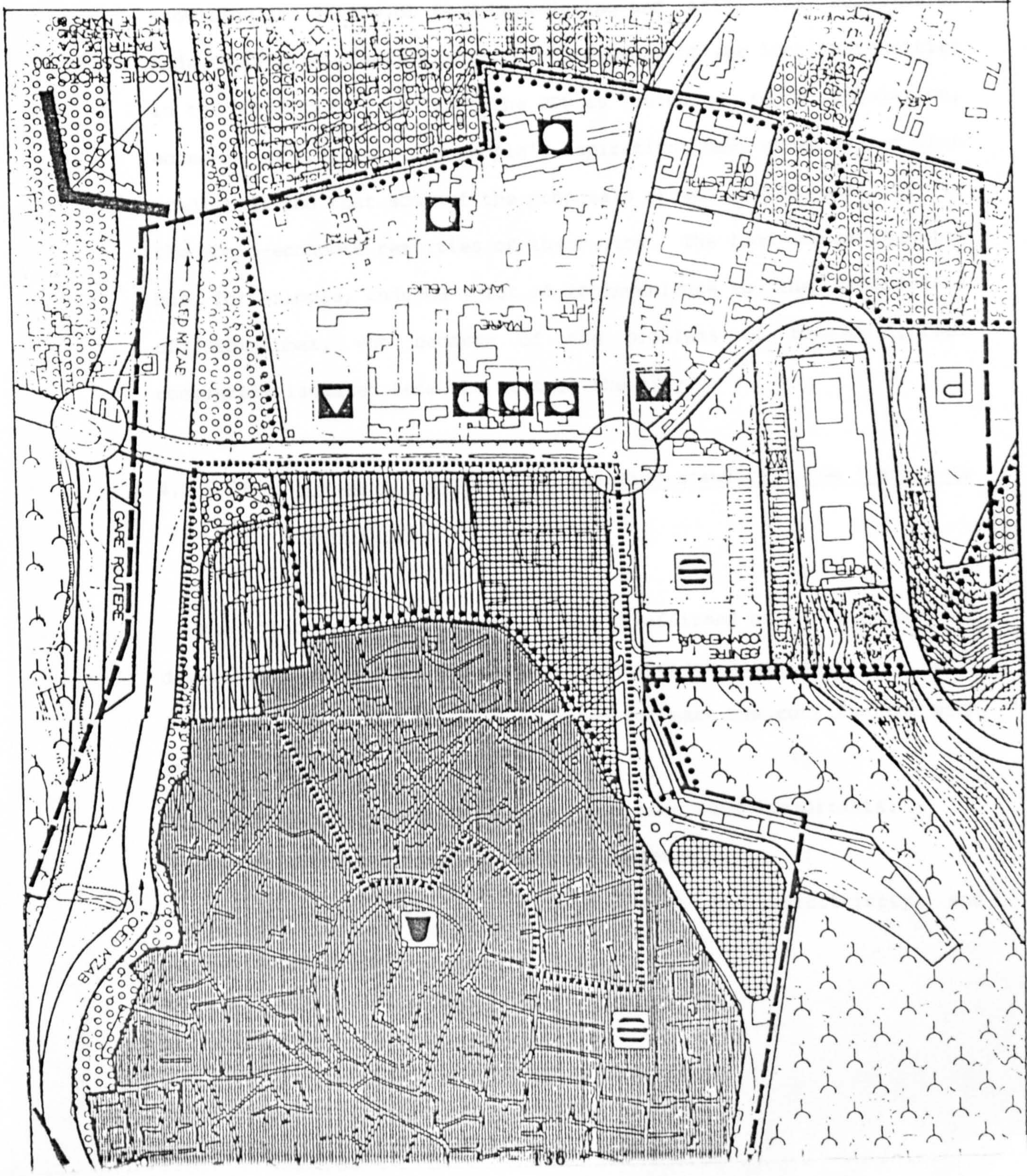
PDU directives

KEY

- Ksar
- Extension of ksar
- Villas type
- Housing in oases
- Mixed zone
- Green belt
- Non-Aedificandi zone
- Cemetery
- Mosque
- Market
- School
- Administrative

- Main road (25m wide)
- Secondary road
- Town centre perimeter
- PDU Speerplan bureau (1975)

- Area of study
- Quartier des anciens Moudjahidines



The different stages in the formation of the PDU (analysis of existing and future situations, proposals for corrective action and subsequent plan) resemble the format of a 'blueprint' or 'master-plan' which was widely criticised for being a static rather than a dynamic mode of physical planning. The absence of any provision for review or feed-back during and after its formulation made the PDU even more static. Indeed, many of the local authorities in the M'zab complained that the PDU is outdated since population, economic activities and people's aspirations have grown faster than predicted; and that some of the proposals showed little affinity to the socio-economic realities of the region. The land-use segregation has, for example, induced a lot of inconvenience to the inhabitants of Sidi-Abbaz, who because of the problems of transport, feel completely isolated from the rest of the city.

4.9.2.14 Development control and planning standards: the 'permis de construire'

The 'permis de construire' was reaffirmed as an instrument of development control in the physical planning of Algeria in 1975 [18]. A 'permis de construire' is required for each new construction with the exception of:

- Communes where settlements are less than 2000 inhabitants.
- Constructions related to national defence.
- Subterranean work in connection with gas, electricity, and telecommunication

- Educational establishments [19].

Each application for a 'permis de construire' must include four copies of each of the following:

- plans at 1/5000 or 1/2000 scale representing the site, situation and servicing of the proposed development.
- Drawings at 1/200 or 1/150 indicating the aspect, height, surface area and proximity to neighbouring buildings.
- Detailed architectural drawings at 1/100 scale representing the proposed development itself [20].

This application file must be sent to the APC in the commune in which the construction is to be realised [21]. However, in the case of constructions of national or regional concern, the application should be sent to the 'Wali' of the region concerned [22]. The 'Ministre de l' Urbanisme' should be contacted for construction of more than 500 dwellings or when the projected buildings involve land over four hectares [23].

The decision to grant the permis de construire must be notified within 45 days in the case of applications submitted to the APC and two months for those submitted to the 'Ministre de l'Urbanisme' or 'Wali' [24]. In reality the notification takes much longer (tab 4.5, Appendix III) and the slowness of this procedure seems to be one of the main causes for people's negative attitudes towards the planning

system in the area (graph 4.2). The 'permis de construire' is valid for two years from the date of notification [25].

4.9.2.15 Criteria for granting the 'permis de construire'

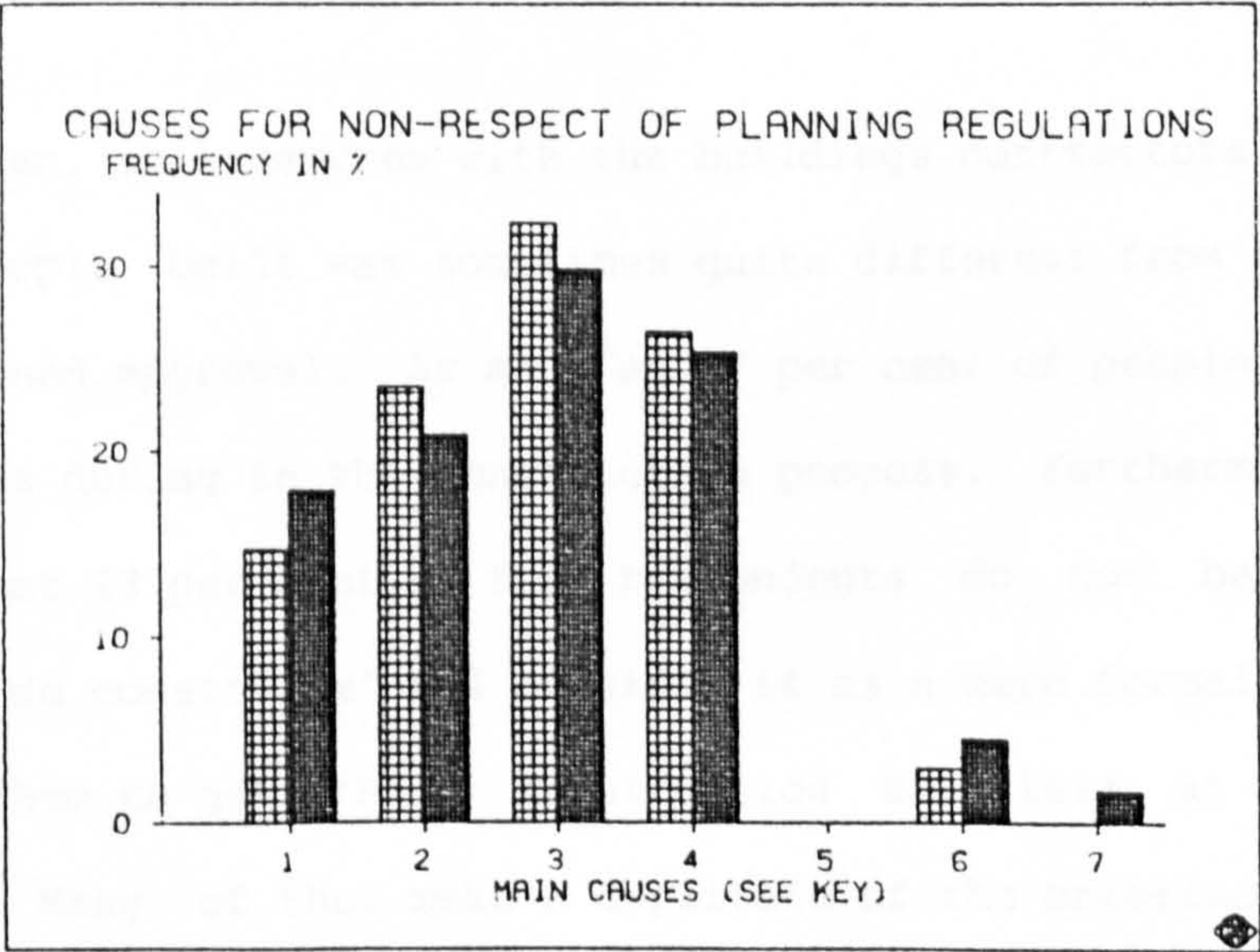
Each application is first tested for compatibility with the 'PDU', then assessed for conformity with the planning standards contained in 'Decret 75-110' [26]. These relate mainly to the provision of space between buildings, access requirements, services, drainage and residential building standards. Article 28 gives an idea about the general form of the residential standards outlined; it requires that:


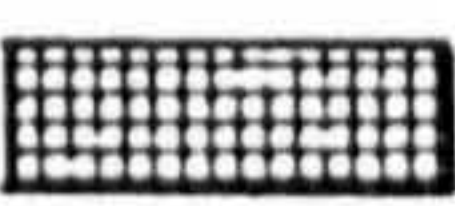
1. All principal rooms must have a minimum floor area of ten square metres, with the smallest dimension not less than 2.7 metres.
2. The kitchen must not be less than six square metres.
3. The height (floor to ceiling) must not be less than 2.6 metres.
4. Windows must be at least 1/8 of the floor surface of the room.
5. There must be at least one bathroom (or shower) for each dwelling of two or more rooms.

For the specific case of the M'zab, which is a 'classified' or listed site, the followings were added:

1. The total height of the building must not be more than seven meters.
2. The length of the principal facade must not be more than twelve meters.

Graph(4.2): People's attitudes towards the planning system.



-  RESPONDENTS IN OLD HOUSING AREA
-  RESPONDENTS IN NEW HOUSING AREA

- 1-Do not agree with the 'classification' of the city
- 2-Do not see the necessity of getting a planning permission
- 3-Think that the formalities take too long
- 4-Find the regulations too restrictive
- 5-Find the regulation too technical
- 6-Find the regulations devoid of any cultural connotation
- 7-Do not want to waste money

3. The terrace must be surrounded by walls of not less than 1.60 meters in height [27].

A review of the applications for the 'permis de construire' submitted during 1985/1986 shows that most applicants respect those regulations. Only 37 per cent of the applications were rejected (table 4.5, Appendix III). This is quite surprising when 70 per cent of the local authorities think that people do not respect the planning regulations, and when 67.1 per cent of the people themselves affirm it (graph 4.2).

However, an interview with the buildings contractors showed that what people built was sometimes quite different from that for which they gained approval. As many as 87 per cent of people alter their dwellings during in the construction process. Furthermore graph(4.2) shows that 23 per cent of the respondents do not believe in the 'permis de construire' and consider it as a mere formality which will enable them to get their construction materials at a subsidised price. Many of them make a duplicate of the architectural drawings already used by a friend or relative and use them for their application, just to make sure that they fulfill the criteria for getting the 'permis de construire'; what they are intending to build is sometimes completely different from the drawings and plans they submit with their planning application.

Some building contractors (20 per cent) believe that this attitude is encouraged by some architects who design one prototype and then 'sell it quite cheap' to their clients, persuading them that they could change anything they wanted once they had the 'permis de construire'. Three of the architects contacted explained that they had to do it because many people could not afford or would not pay for a design done specially for them.

The main types of alterations consist mainly of:

1. Additions of new elements (storage rooms, garages, workshops).
2. Change in the arrangement and size of rooms.
3. Change in the external aspect.
4. Elimination of the set-backs, and increase of the built surface.

The local housing authorities argued that these alterations and non-respect of the planning and construction regulations would be reduced once 'Ordonnance 75-67' relative to controls and sanctions is implemented [28]. This latter is exemplified in the 'certificat de conformite'.

4.9.2.16 The 'certificat de conformite'

Thirty days after the completion of work, the beneficiary of the 'permis de construire' would have to notify the APC. This latter would visit the development and makes sure it conforms to the plans originally presented for the 'permis de construire. If it does not, a legal court can order the demolition of any irregular development.

A fine of 20 to 500DA (approximately 1.5 to 37.5 pounds) may be imposed for each day of non-compliance with this decision. If, after a period specified by the court, the land has not been returned to its original state, the APC could proceed to the demolition work and charges the beneficiary with all the costs.

4.10 MORPHOLOGY AND PREDOMINANT FEATURES OF THE MODERN SETTLEMENT

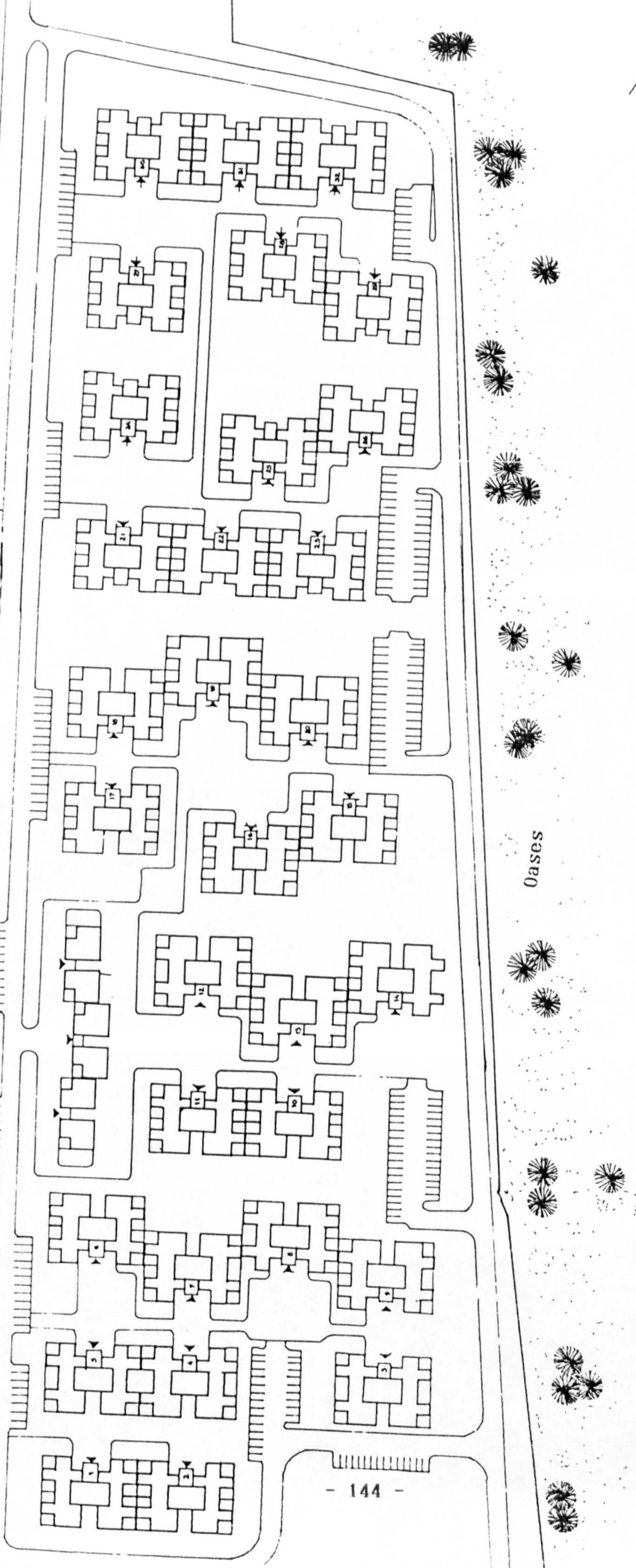
The new settlement of Sidi-Abbaz is characterised by wide straight, grid-pattern streets, concrete dwellings, straight lines, sharp edges, and large detached housing lots (fig 4.8 and 4.9). Each block consists of eight flats, four on the ground floor and four on the upper floor. Streets intersect at right angles, and are exposed to climatic extremes. These extremes are intensified by the use of asphalt streets. This settlement is also characterised by two clear spatial domains: the very public and exposed such as the wide street and the very private secluded and isolated such as the dwelling unit. There are no evident spatial linkages or transitional areas between them. Instead, long streets are lined with repetitive dwellings of identical character. The 'Souk-El-Fellah', a kind of supermarket, serves as the main social domain, specially for the adults who gather in its parking area which also serves as a bus stop.

Besides the mosque where people socialise after prayers, the only major social domain is the dwelling. Children, too, play inside the dwellings. They are seldom seen playing in the street because of the

Construction site
(300 dwellings)

Cemetery

Towards Ouargla



Fig(4.8): General layout of the new settlement of Sidi-Abbaz.

Fig(4.9): Different views of the new settlement of Sidi-Abbaz.



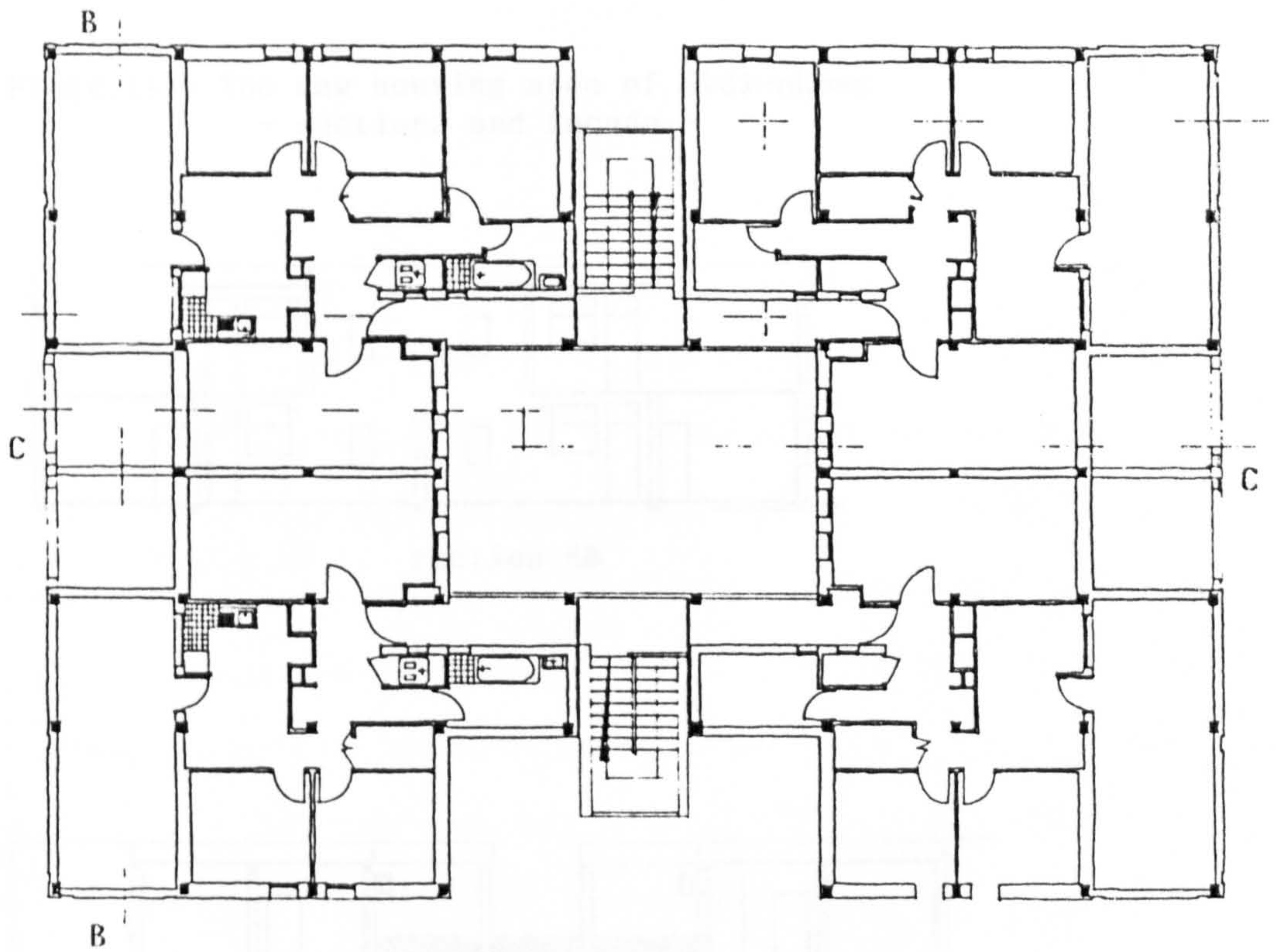
traffic and risk of over exposure to the sun. Even adults are rarely seen socialising in the streets except in the evening after sunset. Socialisation has shifted from outdoor to indoors, for the most part.

4.10.17 The standardized or prototype residential unit

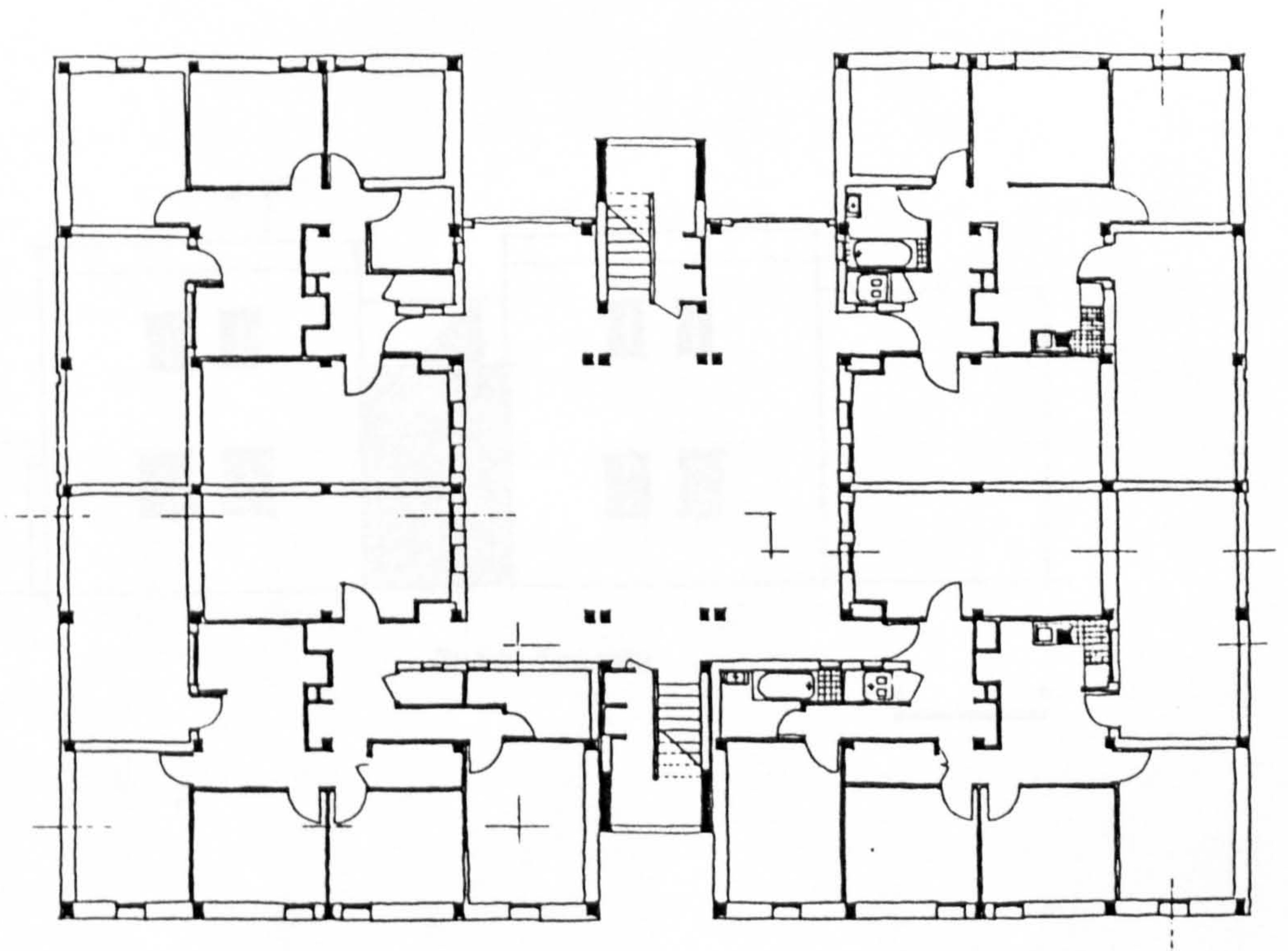
It consists of two major spatial sections. One is composed of the main dwelling structure such as the rooms, the other is the outside ring of open space which forms a yard or veranda. In its conception, the modern dwelling in Sidi-Abbaz has borrowed many norms and standards from different Western countries.

The dwelling is no longer introverted and large windows are the main features of these dwellings, but they are seldom open. In fact, most dwellers have added screens to the windows. The modern dwelling is not designed primarily to incorporate privacy as one of the main elements of composition; it is designed and spatially organised for a way of life different from that of the typical Mozabite or Muslim family. The kitchen, by its position in the middle of the dwelling has replaced the courtyard or 'Ouest-eddar' as the generator of the house; this latter has become more a kind of backyard (fig 4.10 and 4.11).

Fig(4.10): Layout of block of flats.

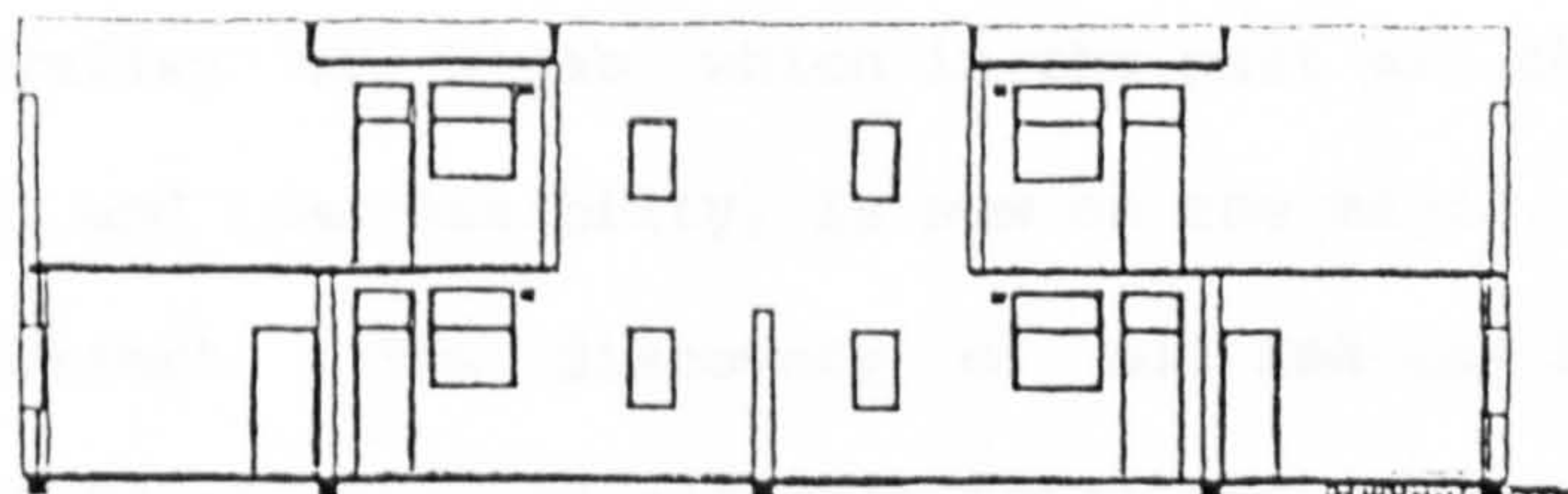


First floor flats

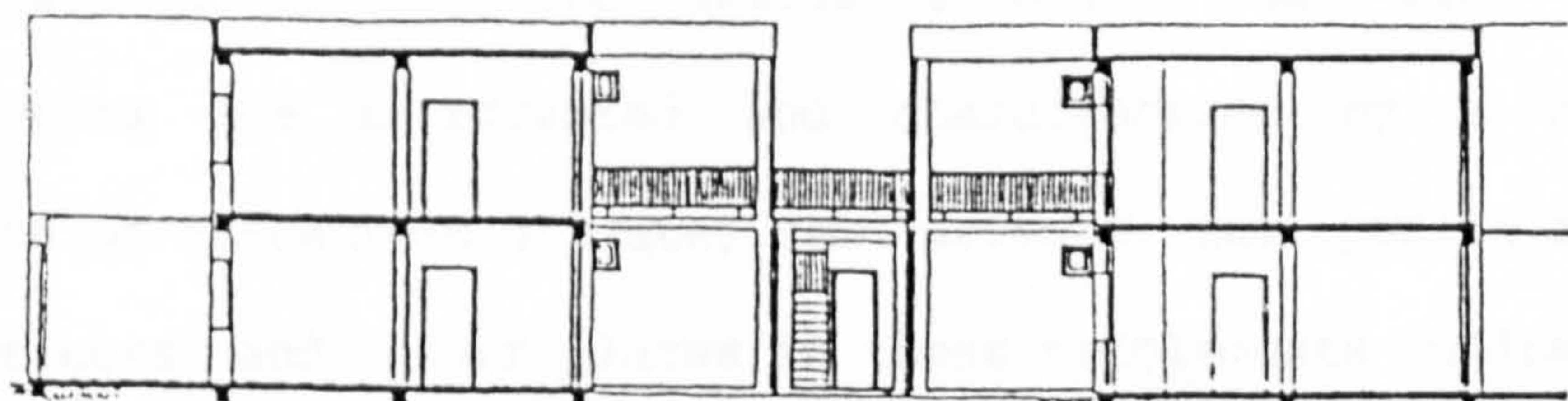


Ground floor flats

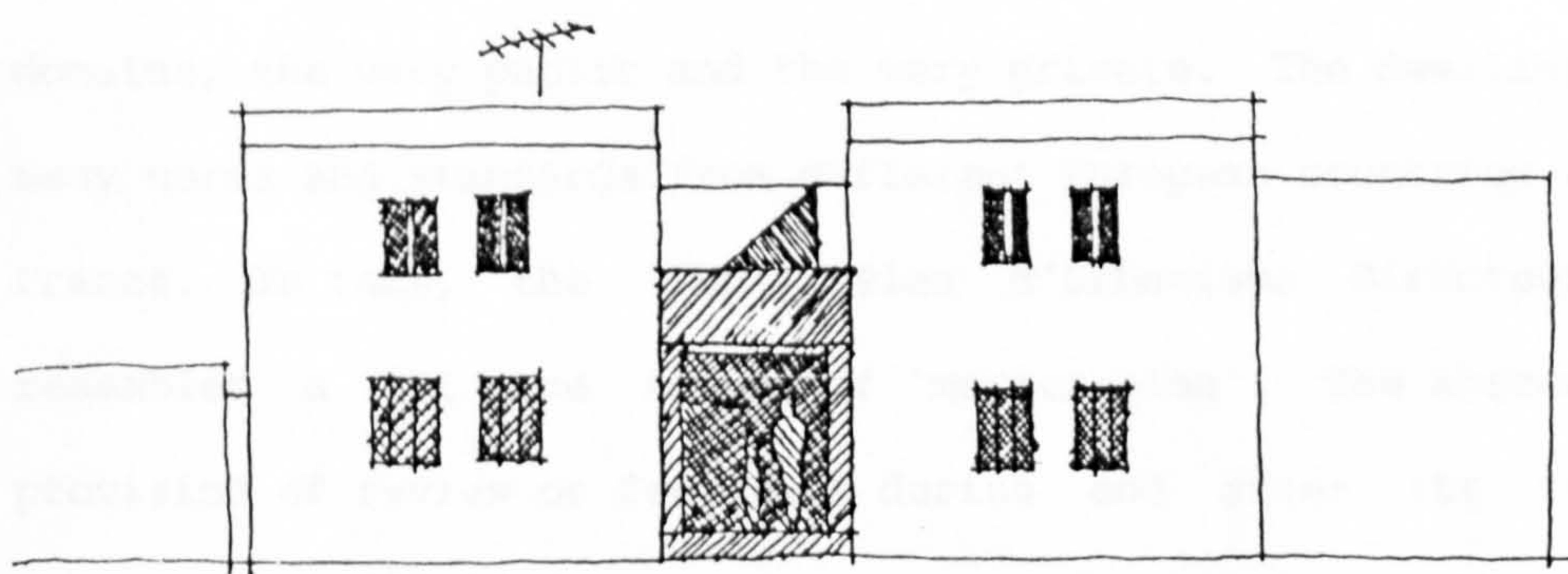
Fig(4.11): The new housing area of Sidi-abbaz
- sections and facade -



section BB



section CC



Main facade



4.11 CONCLUSIONS

The valley of M'Zab which in the past was characterized by its remoteness and inaccessibility, is now on the major road through the Sahara Desert. The discovery of oil and gas in the neighbouring fields of Hassi-Messaoud and Hassi-Rmel led to considerable change and growth in the area's economic activities. This attracted many workers from all parts of the country, and caused the development of vast government housing schemes, resulting in an unprecedented juxtaposition of old and new. In effect, the old indigenous settlements are introverted and characterised by a multi-level division of space into private, semi-private, semi-public and public. The streets and other places in these settlements follow a certain hierarchy and the circulation pattern itself functions as a social and control mechanism. The courtyard house is the dwelling type, and houses are clustered radially and along culs-de-sac. Conversely, the new settlements are grid patterned and divided into two clear spatial domains, the very public and the very private. The dwellings borrow many norms and standards from different European countries especially France. In fact, the 'PDU' (Plan d'Urbanisme Directeur) itself resembles a lot the format of 'master-plan'. The absence of any provision of review or feed-back during and after its formulation make the 'PDU' even more static. Furthermore, the 'permis de construire' or building permit system is quite an expensive, laborious, and lengthy process. It could sometimes entail a wait of up to a year, and many people were unhappy with the lengthy

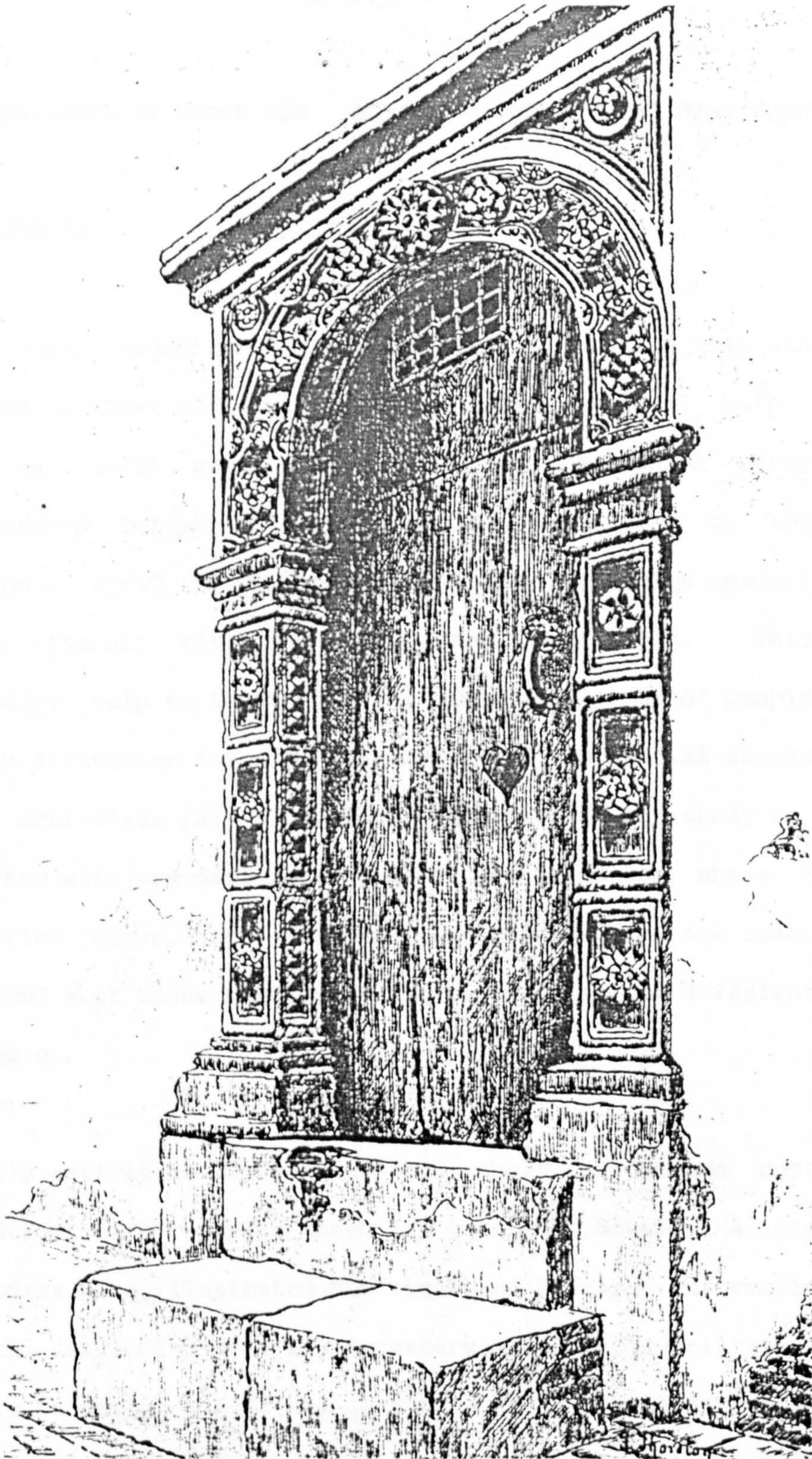
administrative procedures rather than with the the planning regulations, and building standards themselves. Concluding that these latter comply with people's needs is, however, premature, as most respondents did not experience and live under such standards. Indeed, most of the respondents, users as well as housing authorities and building contractors, reported that the respect of building regulations was very low, and that alteration to officially approved schemes was a very common phenomenon. The next chapter takes the investigation further and examines how people living in government built housing experience the new standards and norms.

4.12 NOTES AND REFERENCES

1.
Goddard,J. "Oasis modern, essai d'Urbanisme Saharien." Alger, 1954.
2. The Khalifa Ali was the son in law of the Prophet Mohamed. The Khoulaifa-er-Rachidoun were the governors of the Islamic Empire. They succeeded the Prophet.
3. The dates of the foundation of the settlements are given with some reserves. See Mercier,M. "La civilisation urbanie au M'Zab." Pfister, Alger, 1922. p.122.
4. Donnadieu,H., and Didillon,J. "Habiter le desert, les maisons mozabites." Architecture & Recherche, Pierre Mardoza, Bruxelles, 1977. p.321.
5. Vallet,R. "Le Sahara Algerian." Alger, 1927. (The Tax consisted of 45 black slaves.).
6. Donnadieu,H., and Didillon,J. 1977. op.cit. p.33-34.
7. Ibid.
8. Ibid.
9. Speer,A. "Plan d'Urbanisme Directeur du M'Zab." Bureau Speerplan, 1976.
10. Sari,D. "Premier apercu sur l'accroissement de la population de 1966 a 1977, les rapports et incidences sur les aménagements regionaux en cours." Cahiers de l'aménagement de l'espace, no.2, CNERAT. Alger, April/June 1978.
11. Donnadieu,C. 1977. op.cit. pp.34-36.
12. Mercier,M. 1922. op.cit.
13. Ibid.
14. Planhol,X. "The World of Islam." Ithaca, New-York: Cornell University Press, 1956. pp.23. 25
15. Mercier,M. 1922. op.cit.
16. Secretariat d'Etat au plan. "Circulaire concernant le plan communal d'urbanisme directeur: Cl-PUD." Algiers, 1974.

17. Speer,A. 1976. op.cit.
18. Journal officiel de la Republique Algerienne (JORA). Ordonnance 75-67 of 26 September 1975.
19. Ibid., article 2.
20. JORA. Decret 75-109 of 26 September 1975, article 1.
21. JORA. Decret 75-103 of 27 August 1975, article 3.
22. JORA. Decret 75-67 of 26 September 1975, article 4.1.
23. Ibid., article 4.2.
24. Ibid., article 7.
25. Ibid., article 11.
26. JORA. Decret 75-110 of 26 September 1975.
27. Direction de l'Urbanisme de la Construction et de l'Habitat. Ghardaia, 1986.
28. JORA. Decret 75-67 of 26 September 1975, article 42.

CHAPTER FIVE



ALGIERS: CARVED STONE DOORWAY IN THE NATIVE QUARTER

CHAPTER FIVE

PRINCIPLES OF SPACE USE - ACTIVITY PATTERNS AND BEHAVIOUR-

5.1 INTRODUCTION

The main objective behind studying behaviour is that since needs underlie manifest actions, studying behaviour will help to give inferences about needs [1]. In the same manner analysing the relationship between grouping systems, in terms of space and behaviour, would help increase understanding of how specific social groups interact with the built environment [2]. This would eventually help to identify why a particular group of people conduct certain activities in particular ways, and the spatial segregation of those activities [3]. Therefore, this part of the study is not only concerned with how different places are used or where different activities occur, but also when these activities are conducted, by whom, and what these particular activities mean for different groups of people.

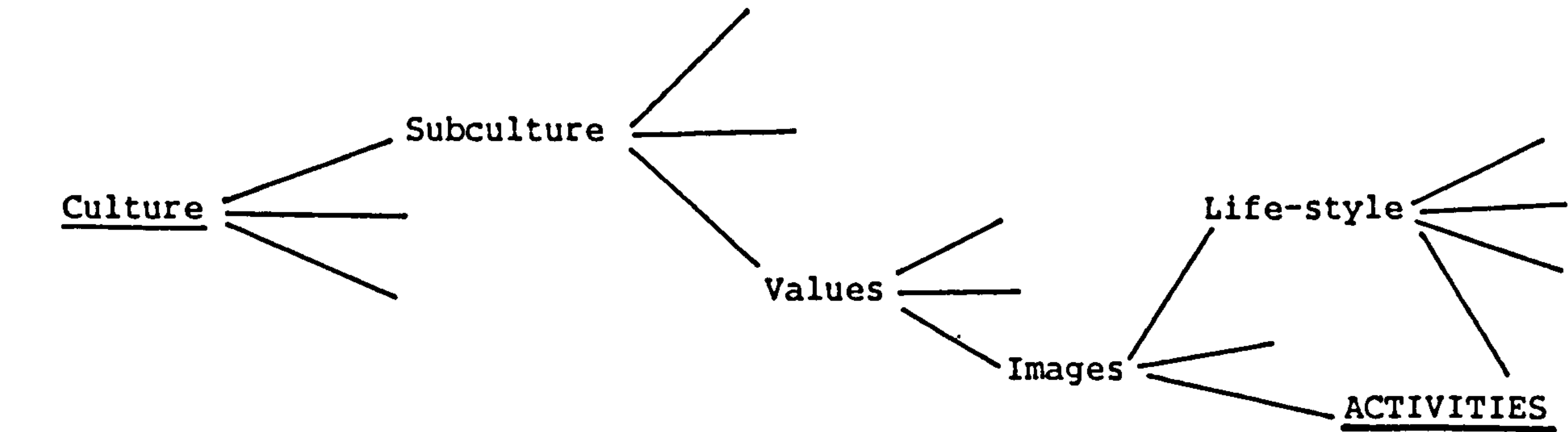
Daily activities of people, and their associated customs and conventions are usually taken for granted. However, a large number of studies have illustrated how right and precise information about the real usage of places was necessary if liveable built environments were to be designed [4]; how sensitive and accurate processes for understanding places and how they are experienced by ordinary people

during normal days are essential in the training of any professional involved in the design process [5]. This chapter focusses on people's interaction with their respective environments, namely a traditional contrasted with a modern one. It attempts to understand how people personalize, furnish and use their residences, their customs, and the meaning they attribute to their surroundings, and hence draw some conclusions about the criteria that contribute in making a successful culturally responsive residential environment.

5.2 THE CULTURE/ACTIVITY RELATIONSHIP

Culture as a concept is too broad to relate to the built environment. Rapoport (1977)[6] suggests that activity is the key element in the understanding of culture, as it aids the understanding of the lifestyle of a community. He proposes a hypothetical schema, illustrated in diagram (5.1). Following this line of thought, designers should start with activities as they have always done, but they will have to stress their specificity, their relationship to associated activities and their symbolic meaning (i.e. their latent aspects) which will lead to rather different results than the exclusive use of manifest aspects of activities. After that designers should move from activities to systems of activities (i.e. to lifestyle) and eventually through values and world views to culture and therefore gain an understanding of the interaction between socio-cultural and other systems-and the built environment.

Diagram(5.1): Relationship between culture and activities
(source: Rapoport, 1976)



Culture	World View	Values	Life-style	Activities
There are very many definitions of this concept in anthropology. At the very least it is in some way about a group of people who share a world view, beliefs, values, etc. which are learned and transmitted. These create a system of rules and habits which are consistent and related (at least theoretically).	This is clearly part of culture, is related to choices, and reflects an ideal. It is still difficult to use and operationalize. (see for example Jones 1972; Szalay and Maday 1973; Szalay and Bryson 1973)[1]	These are part of a world view and are easier to identify, but still too complex, at this stage, to link to the built environment. Values are frequently embodied in images.	This consists of manners, rules, choices, role allocations, allocations of resources, etc. and has been more usefully used in relation to the built environment - e.g. the concept of 'genre de vie' in French cultural geography; see also Michaelson and Reed (1970)[2].	These are the most specific and may offer the most useful entry point into relating built environment and culture. Starting with activities, it might be possible to identify differences in life-style, values, world views, images; and cultures as they relate to the built environment.

5.2.1 Activity Characteristics

Activity itself is the result of a lot of different factors, and has many characteristics. First of all, activity is a personal expression and even if it is carried out within a group, the personal characteristics of the 'actor' have an impact upon the way the activity is carried out. Furthermore the sex, age and cultural background of the actor for example have a great influence on the intensity and rhythm of the activity carried out. Intensity and rhythm, however, are only two of the characteristics of activity which in reality encompass many others, of which it is helpful to distinguish, or at least to be aware of, the most basic ones, which are location, duration, occurrence. But these characteristics help only to highlight some essential details of what is going on, in a place. They do not at all or hardly provide a complete framework, which allows one to observe, record and analyse an activity in a manner really useful to the designer. To overcome this problem, Rapoport (1982)[7] suggests that activities can be analysed according to four aspects:

1. Proper activity: shopping, walking, sitting.
2. Specific way of doing it: shopping in a bazaar, walking in the street, sitting in front of the house.
3. Additional or associational activities which become part of an activity system: exchanging gossip while shopping, observing pedestrians when sitting in front of the house.

4. Symbolic aspect: shopping as a recreation, eating as a ritual.

The proper activity is more or less common to all cultures, but variability is seen in the last three points, and specially in what refers to symbolic aspects. It is the differences between these four aspects of apparently simple activities which lead to specific forms of settings, differences in their relative importance, the amount of time spent in them, who is involved and so on.

In Algeria, for instance women traditionally used to go to the 'hammam' or public bath not only to clean themselves but also to meet other women and socialize. But, the real reasons why women go to the 'hammam' (in this case having some time for themselves, relaxing and making new acquaintances) were not considered when the 'hammam' was not included in the new housing schemes. Indeed, the designers looking only at the manifest form of activities, decided that the provision of individual bathrooms would fulfil people's hygienic needs and replace the 'hammam'.

Other elements which are playing similar roles are the laundrettes in modern U.S cities where their latent functions as social meeting places, has become a new and important element in the house-settlement system. Indeed, it has been reported that many lonely people visit them daily, with single pieces of laundry, just to have a chance to socialize [8].

An understanding of all the aspects of activities completed by a detailed analysis of each activity, its effect on other activities, its location in space and time, how and by whom it is performed and why, is therefore necessary and would provide a detailed description of activity routines which can be very useful in the design process.

Moreover, analysing the temporal dimension of activity systems can also provide a good description of how people spend their time, providing useful information about the intensity of use of different spaces which can in turn be used to inform designing or plan making. However, one has to remember that people's attitudes towards the handling of time and the values attached to time, are quite different and vary from culture to culture and even among individuals. Hall (1966)[9] suggests that there are two basically different ways of handling time: monochronic and polychronic.

- Monochronic handling of time: It is characteristic of low-involvement people who compartmentalise time, they programme one thing at a time and become disorientated if they have to deal with too many things at once.
- Polychronic handling of time: this is characteristic of people who are much involved with each other and tend to keep several operations going at once.

This handling of time has repercussions on the organisation of space. The monochronic person finds it easier to function if he or she can separate activities in space, whereas the polychronic person tends to

collect activities since order is not very important to him or her. Hall (1966)[10] sees a connection with these behaviour types even on the larger city-scale,

"The Spanish plaza and the Italian piazza serve both involvement and polychronic functions, whereas the strung out main street so characteristic of the United States reflects not only our structuring of time but our lack of involvement in others."

Rapoport (1982)[11] adds that groups with different rhythms may be in conflict, as when a group (in this case the Swiss), regards a particular time as quiet and for sleep, another group (in this case the Southern Italians) regard it as a time for noise and boisterous activity. And thus, cultural conflicts may be more severe at the temporal level than at the spatial, although people live in space-time, and spatial and temporal aspects interact and influence one another.

Therefore, designers should be aware that cultural differences in the values attached to time may influence the rhythms of human activities and their distribution in time. Moreover, the analysis of activity systems should be elaborated to examine how the same space is used differently at different times, and how it has different meanings. For example, the courtyard in most traditional North-African regions is used in the morning for housework, then for eating, relaxing and children's play during most of the day, and

finally for sleeping purposes during the summer nights. The remainder of this chapter, discusses each of these activities and many others in detail and attempts to gather precise information about the real usage of places.

5.3 ACTIVITY PATTERN AND BEHAVIOUR IN PUBLIC PLACES

The use of housing depends quite strongly on what happens in the neighbouring streets and other places [12]. Therefore, identifying the specific settings where social interaction and meetings take place, the way they occur, who is involved in them and the relationship of these settings to other places would help not only to overcome the problem of non-use, under-use or over-use of such facilities but also to better understand, plan and design urban areas. In North Africa, for example, the house is a major and central setting for women and female teenagers but not for males. The latter usually use the house as a resting place and spend most of their spare time either in the mosque, the market, the cafe, or street corners. Contrary to the British, for example, whose masculine roles usually depend on household maintenance and gardening, it is quite unacceptable for an Algerian man to stay too long in the house, at least during the day; Bourdieu (1973), notes:

"The man who stays too long in the house during the day is either suspect or ridiculous: 'He is the man of the home', as one says of the importunate man who stays amongst the women and who 'broods at home like a hen in a hen-house'." [13]

And,

"A man who has respect for himself should let himself be seen, should continuously place himself under the gaze of others, and face them (gabel). He is a man amongst men."

[14]

Indeed, in Algeria the cafe is a place for local and world news to be obtained and exchanged; and a local man who is not seen for sometime, becomes suspect. The role of the cafe in the Algerian house-settlement system is very important. It is not only the main setting for conversation, recreation and games but even business deals, and arranged marriages, all tend to occur in the cafe which opens very early in the morning and stays open until very late in the evening. There are cafes for different groups. For example, cafes in the vicinity of the University of Algiers are mainly used by academics and students; those near the market place are used by rural migrants and other trademen.

This short review of the importance of the cafe in the Algerian house-settlement system, shows the necessity to look at peoples's different meeting places, their manifest as well as their latent functions, their relationship to other elements in the system and so on. By comparing activity patterns and behaviour in public places in the modern and the traditional settlements, this study attempts to identify what elements of the house-settlement systems are intensively used and preferred, which are not, what are the changes

(if any) and what are the consequences of those changes on the use of dwellings and streets in particular, and on people's spatial and temporal use of the city in general.

5.3.1 Traditional settlement: Quartier des Anciens Moudjahidines

The examination of the traditional settlement in terms of activity and behavioural patterns shows the presence of a hierarchy of use strongly related to the need to regulate and filter the movement of people according to kinship, sex and age across commonly marked and accepted boundaries. These boundaries (real or fictitious) seem to have emerged from the need to control access and mobility and avoid social contact when it is not desired. This division of spaces is accompanied by specific rules regulating behaviour and social interaction in space and time. Social conflicts are avoided because manners and rules are shared and understood by the whole community.

In the quartier des Anciens Moudjahidines, as in most traditional Islamic cities, the cul-de-sac or 'driba' is shared by a group of families and is usually maintained by them or more exactly by the teenage daughters who can be seen cleaning the place very early in the morning and late in the afternoon (it is only after puberty that female children become subject to rules of privacy.). The 'driba' is also the main activity and socialising place for the old men of the extended family. Most of them leave the house quite early in the morning or as soon as the housework is started and go back when this

activity is finished. In the afternoon, after the 'Asr' prayer most of them go out again and stay in the 'driba', sipping tea or telling their beads, while supervising children's games until the following prayer time, 'Maghreb'. Indeed, the young children's activity sphere starts in the courtyard and expands to the 'skiffa' where mothers can keep a close eye on them, then to the 'driba' where the old members of the family and neighbours share the mother's task of looking after the children.

'Tamahelt', the neighbourhood access routes, are usually used by the residents of the neighbourhood and the community. However, it is the male teenagers who seem to have appropriated these streets by converting them either into football pitches or to informal meeting and socialising places.

The 'Charaa', the market place and the neighbouring cafes are the most commonly used public places. Activities such as national and cultural ceremonies, trade, amateur street performances and public speeches, all take place in the 'souk'. It also functions as the main centre of exchange and contact between the settlements' inhabitants and outsiders. Traders from nearby settlements and nomads meet there to exchange goods and services with the locals. The traditionally close social interaction is very evident here. When people meet in the market place they joyfully greet each other with a hand shake, a hug or a kiss. In almost every shop around the market or even cornershops, there are visitors who sit there daily,

sipping tea or coffee while watching the activities of the 'souk' (fig 5.1)

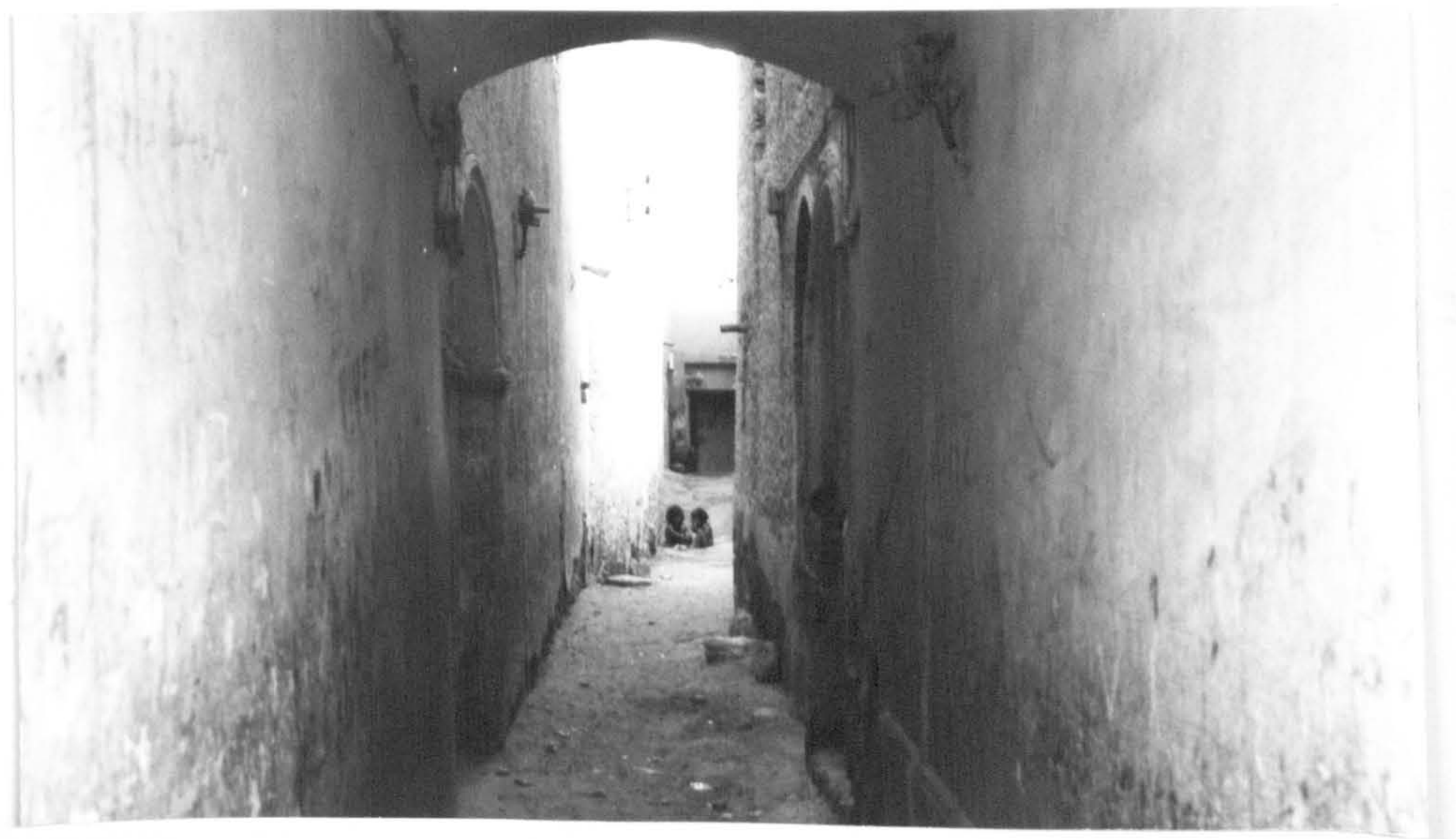
A separate 'suq' for women can be found in one part of the main 'souk'. There women can buy clothes, toiletries and jewelleries. The one and a half day week end, (Thursday afternoon and Friday), is the busiest time for the market. Most working people spend their free time in the market shopping and socialising.

The pattern of life in Ghardaia is quite different from that of Algiers or any other Northern city. Because of the heat, people wake-up early in the morning and at 7am the town is already very busy, it reaches its peak at about 10 am. By 11.30 am everything is closed. It is only late in the afternoon (at about 4.30 pm) that the shops open again. Most of them stay open until 8.30 pm.

5.3.2 The modern settlement: Sidi-Abbaz

Sidi-Abbaz, or 'la cite' as called by the locals, does not seem to follow the same pattern as the traditional settlement. Arriving at 7.30 am for the daily observations sessions, the town seemed still asleep and almost all windows were closed. The only place which was busy was the bus-stop. About twenty people were waiting there; some of them sitting on the pavement, their shopping baskets in front of them, others standing against the wall already exhausted by the long

Fig(5.1): Activities in public places (traditional settlement)



wait under the scorching sun. Finally, the bus arrived bringing a quite large number of early morning shoppers who very quickly disappeared into their dwellings. After a few minutes, the bus left and the place became empty with the exception of two old men who continued to sit on the pavement, protected by very large hats. Later on, it appeared that the bus-stop was the meeting place of many old men and even some younger ones, especially in the late afternoons and early evenings. Arriving from work by bus, many people, mostly men, stand there for a while, continuing a conversation started in the bus, or exchanging greetings and comments with friends who arrived by the previous bus and were still standing there in small conversation groups.

It is only after sunset that the area starts to look lively. Most men leave their houses and come to socialise in the street corners. However, this activity lasts only for a couple of hours, and during a large part of the day the streets are nearly empty. Most heads of households leave home early in the morning either to go to work, shop or socialise in the main market, cafes and shaded streets of Ghardaia-Ksar; while the women and children are confined to their dwellings and their staircases.

5.3.3 Children's play

Field observations show that the size of children's play-groups in the new settlement is much smaller than that of the youngsters in the traditional one. The interview survey reinforces this and shows that children in the modern settlement tend to play inside their dwellings (52 per cent), whereas the majority of those in the traditional settlement are able to expand their recreational sphere and patterns of play into the greater opportunities of the outside spaces (79 per cent), see table (A4.1), Appendix IV.

It could be argued that the transfer of children's play to the dwelling is part of a wider phenomenon of what could be called 'the privatisation of daily life' which has occurred in many areas [15], and that it is more due to the change in the nature of the entertainments facilities which tend to be home based (i.e; televisions and electronic games), than to the design of public open spaces. Indeed, such change cannot be denied; however, this does not seem to be the case in the present study.

Open ended responses and comments from respondents who were relocated from the traditional to the new settlement show that most people reported the design of streets, the isolation of the playgrounds, their over-exposure to the sun and the threat of the motor car as the main reasons for keeping their children home. Many mothers confessed that the continuous presence of their children at

home was sometimes quite unbearable, especially in the cases where the children were so used to playing outdoors. Furthermore, mothers and women in general were themselves restricted to their dwellings.

5.3.4 Women's activities

The majority of women in the new settlement of Sidi-Abbaz reported that their social life revolved around women, almost exclusively inside their homes. It could be argued that Muslim women have all the time been spatially confined by social custom. However, the area in which they lived was not limited to 100 square metres, and a large courtyard, a 'skiffa', a semi-private space the 'driba', and sometimes a dual circulation system assured more freedom of movement. Those mitigating factors have most of them disappeared from the new settlement. Moreover, more than half of the women interviewed, openly expressed social alienation, mostly in sad observations that everybody keeps to himself. By contrast, in the traditional settlement, most of the interviewees spoke enthusiastically of their neighbours and even claimed that they missed each other when one of them was away.

A public facility which is also greatly missed in the new settlement is the proximity of a public bath or 'Hammam'. Turkish baths or 'hammam' are widely used in Algeria; and despite the availability of bathrooms inside the houses many women still like to go there as it is more a meeting and socialising place than anything.

Many arranged marriages are planned in the 'hammam'. And for many women the 'hammam' is the only outing and became a kind of ritual.

To sum up, many women reported that their lives in the new settlement were more restricted and secluded than it used to be in the traditional settlement. Many of them explained that seclusion in the past was not so problematic because, first, the dominant mode of living was the extended family and the presence of other women assured a social life. And, second, the presence of the courtyard, the hierarchy of the public spaces and the circulation system at roof level, added to the proximity of the 'Hammam(s)' and 'souk(s)' all made that there was quite a lot of social life.

5.4 PRINCIPLES OF SPACE USE IN THE DWELLING

If social taboos prevent the Mozabite woman from participating in public life, they make her fully responsible for all family management that is restricted to the home - cleaning, cooking, laundering, and caring for children - This section will discuss ways in which domestic facilities for cooking, eating, cleaning, laundering, relaxing, receiving guests, children's play and sleeping are used in both the traditional and the modern settlement. It will attempt to show that beyond the 'manifest' uses of dwellings which are often taken for granted, there are implicit sets of cultural ideas and values that are used to endow houses and household life with meaning. As already said at the beginning of this chapter, this

study is not only concerned with activities as such but with the specific manner of how and where these activities are carried out. Indeed, even though some activities seem basic and common to most human beings, there are very often differences in the way these activities are carried out (see appendix IV).

In the average Algerian household, for example, religious beliefs, rituals and the five daily prayers structure the family's day and where society is still seen as sexually segregated and domestic roles are still totally assumed by women, the ritual of preparing and eating food is quite different from that of a British household. The number of meals per day, when they are taken, where and how they are taken is different in the two cases. Indeed, in the traditional settlements, it is the custom to undertake a range of activities in the same place and mostly on the floor. For example, a Mozabite housewife feels more at ease in a crosslegged position on the floor while preparing food, whether she is in a flat or a house, and it does not matter if her kitchen contains a sturdy conventional table or side-board, the floor is where she will do most her kitchen work.

The activity of eating itself takes place on the floor. The dishes are usually laid on a low table and sometimes, very low timber stools are used to sit on around the table. After the meal is over and the table is cleared and wiped it is carried back to the storage place until the next meal time. In this manner meals can be taken anywhere according to time, occasion, weather and space available.

However, the courtyard is usually used more than any other place (78 per cent of the respondents in the old settlement of the Quartier des Anciens Moudjahidines use the courtyard for eating purposes).

In the same manner, there are few fixed beds in the traditional house. Mattresses are, however, extensively used either to sleep on the terrace or roof where 94 per cent of the respondent sleep during the hot summer nights or in the rooms where 89 per cent of the interviewees sleep during the winter (table A3.1, Appendix IV). Children usually sleep with their parents until the age of five. The preferred direction of the head in the sleeping position is towards the 'Qibla' (see paragraph 2.1.3).

5.5 CEREMONIAL AND RITUAL ACTIVITIES

For social events such as marriages and circumcisions, it is the tradition for the relatives to spend seven days with the celebrating family. Courtyards and roofs are fully used during these occasions; Congratulations are presented to the family for up to a month after the ceremony, and during all this period the family has to be prepared to receive visitors at any time of the day. Because of the prevailing sexual segregation males and females have to be received in different places.

Similarly, death is a ceremonial event which lasts for forty days, during which relatives and close friends stay with the deceased's

family. Food is prepared daily for the visitors, and each evening men gather in the house to recite the Qur'an.

One of the main religious feasts is the 'Aid-el-Kebir' which is celebrated once each year and involves the sacrifice of a sheep. This ritual usually takes place in the courtyard.

5.6 MODERN FURNITURE AND ITS IMPACT ON THE FLEXIBILITY OF THE DWELLING

The major element that the study of furniture groupings revealed was that the introduction of Western style furniture, somehow restructured the way in which people interacted with their home environment, and reduced the flexibility of the traditional house. In effect traditional spaces do not have a fixed function. The ways in which a space is used vary with the time of day, month and year. The courtyard, for example, is used as a food preparation space, a laundry, a sleeping space and also as a family and friends gathering place. In the Quartier des Anciens Moudjahidines and in the traditional settlement in general, there is a kind of daily and seasonal nomadism within the house. The courtyard and the rooms which surround it - well shaded by the first floor and its porches - are used during the first part of the day in summer and all day long in winter. In winter, the first floor is used most, for it benefits from the low rays of the sun, while the terrace is used during the summer nights.

The traditional furniture is quite basic and can be moved around the house. It consists mainly of low tables, mattresses and 'niches' for storage or display purposes (fig 5.2).

Today, most people cook in a fixed place, either in the kitchen (57.1 per cent) or in the courtyard (40.5 per cent) this is mainly due to the introduction of modern domestic appliances which need a fixed place. Moreover, the introduction of Western style furniture has not only led to the specialisation of the different rooms but also to the need for bigger and more regularly shaped spaces. Indeed, 23 per cent of the respondents complained that their main cause of dissatisfaction with the traditional dwelling was its inadequacy to accommodate certain modern styles of furniture. Indeed, calculations showed that the ratio of space occupied by traditional furniture is 33 per cent while it is 56 per cent when modern furniture is used. This increase is reflected in the advent of such large items such as beds, dining suites, and the like.

However, if many respondents expressed the need for modern furniture not all of them made a full use of it. In the new settlement of Sidi-Abbaz 42.9 per cent of the respondents reserved the Western style furnished living room for special occasions or male guests, and used what is commonly called 'bit-ed-drury' or the children's room. This name does not mean that the room is for the specific use of the children but denotes the informality of the room. This family-room is traditionally furnished with mattresses put

Fig(5.2): Traditional furniture - a reconstructed traditional house in the museum of Ghardaia.



(a): The courtyard as a cooking place.

This photograph and the next ones (b) show some early traditional furnishing items. Note the multi-functional use of the courtyard, and the 'niches' or built-in display cabinets.

Fig(5.2): Traditional furniture - a reconstructed traditional house in the museum of Ghardaia.



(b): The courtyard as a relaxing and receiving place.
Note the position of the weaving frame which was a symbol of good housekeeping.



directly on the carpet or sofas. The T.V is usually in this room.

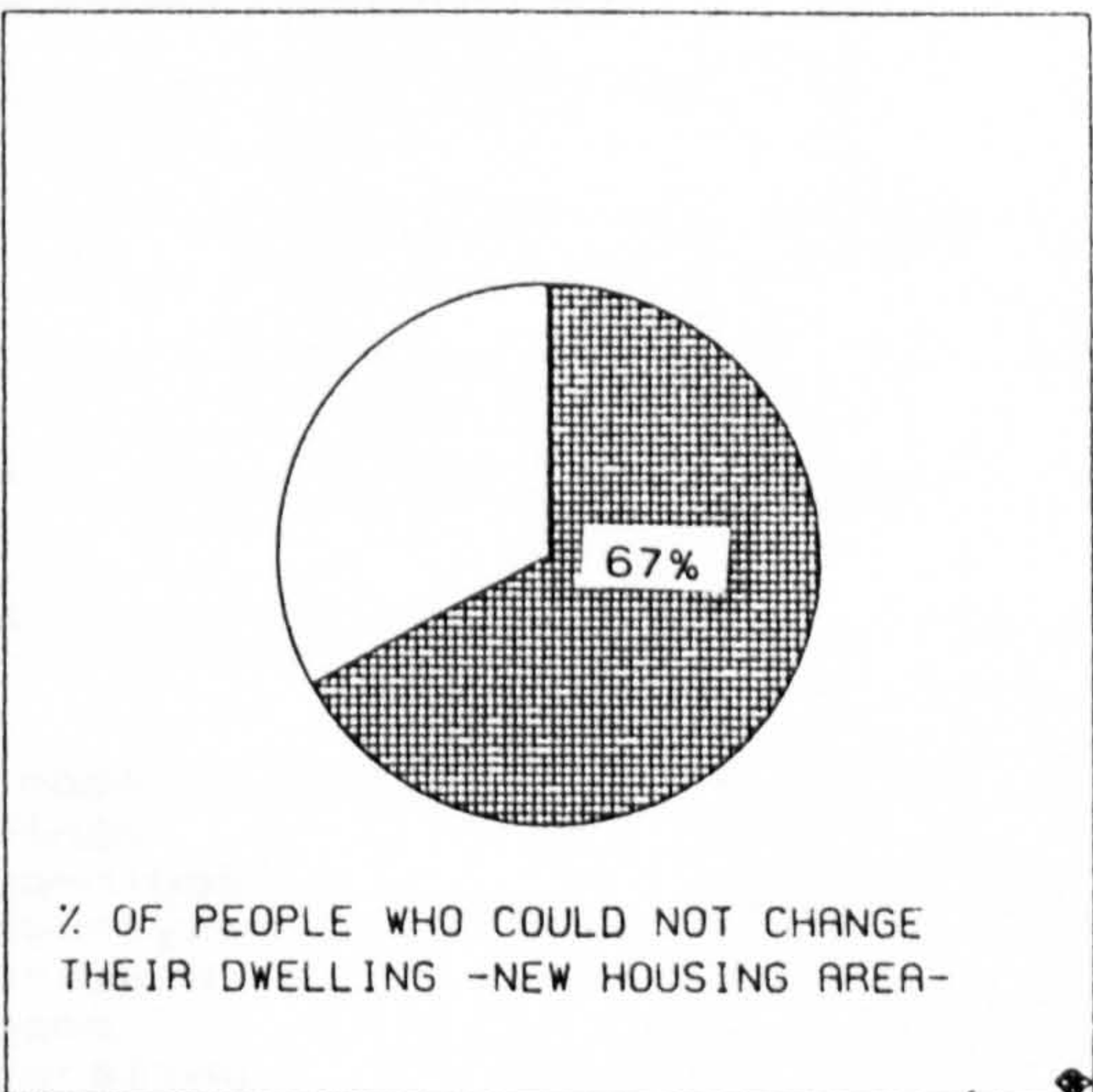
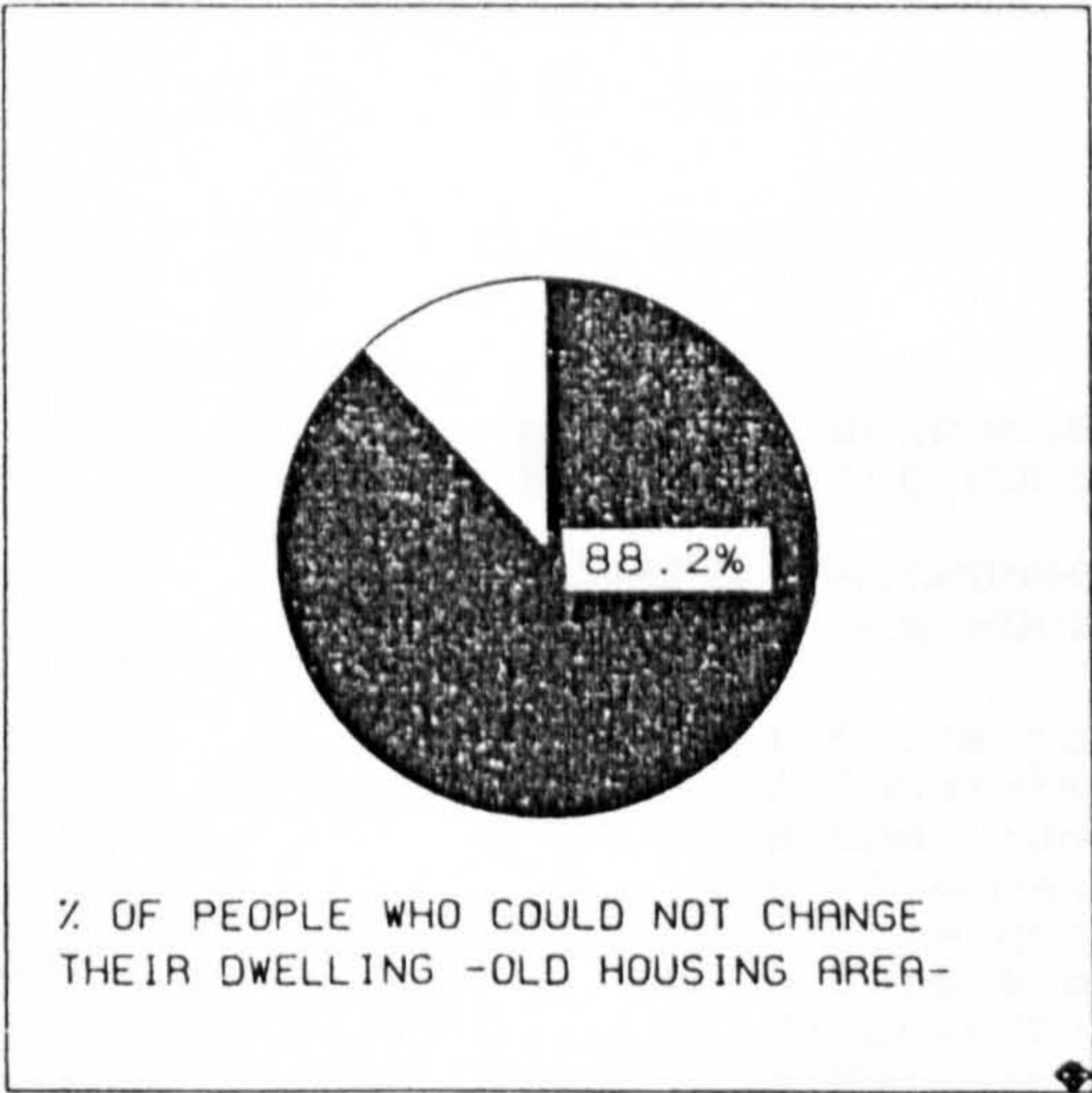
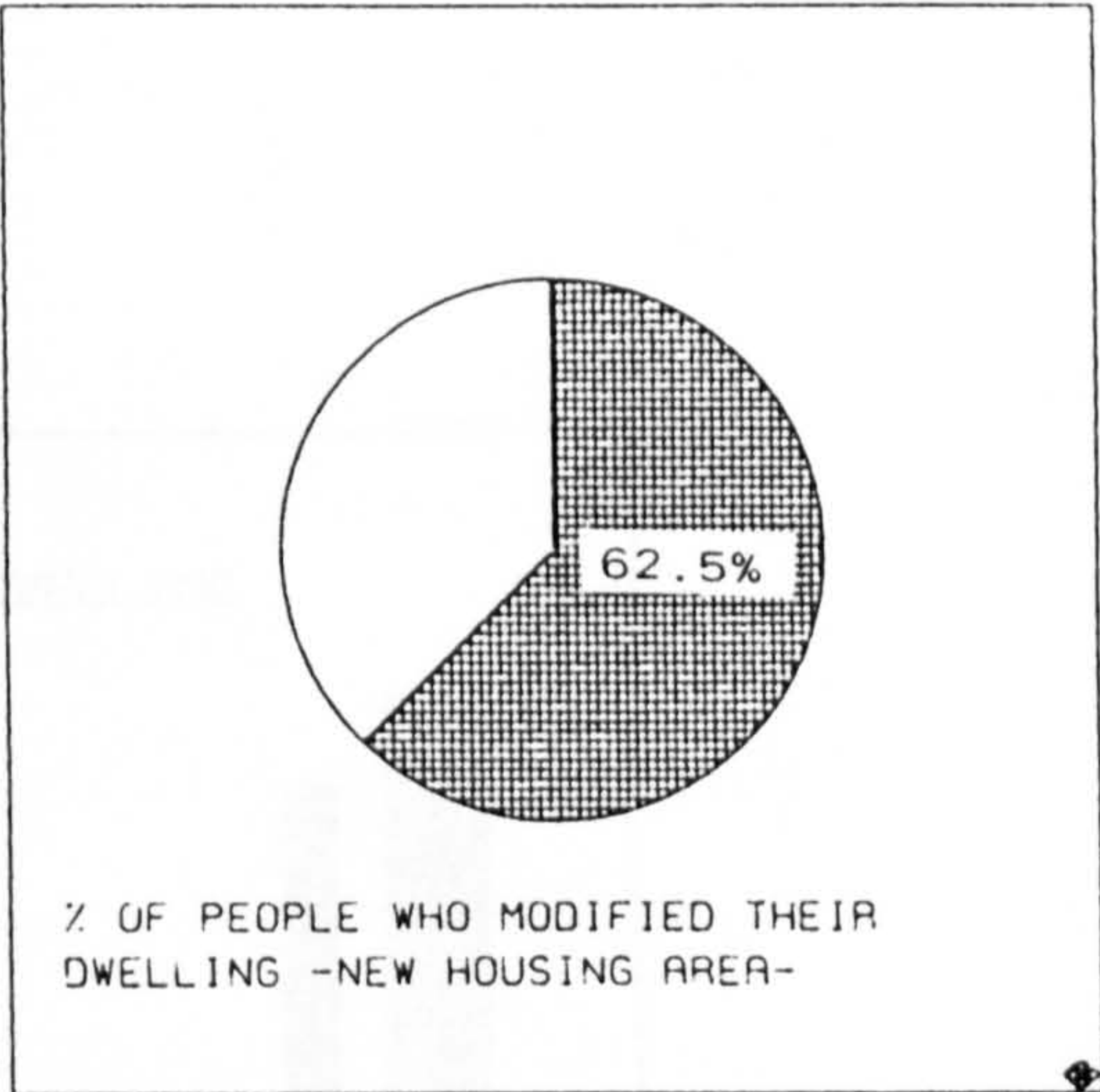
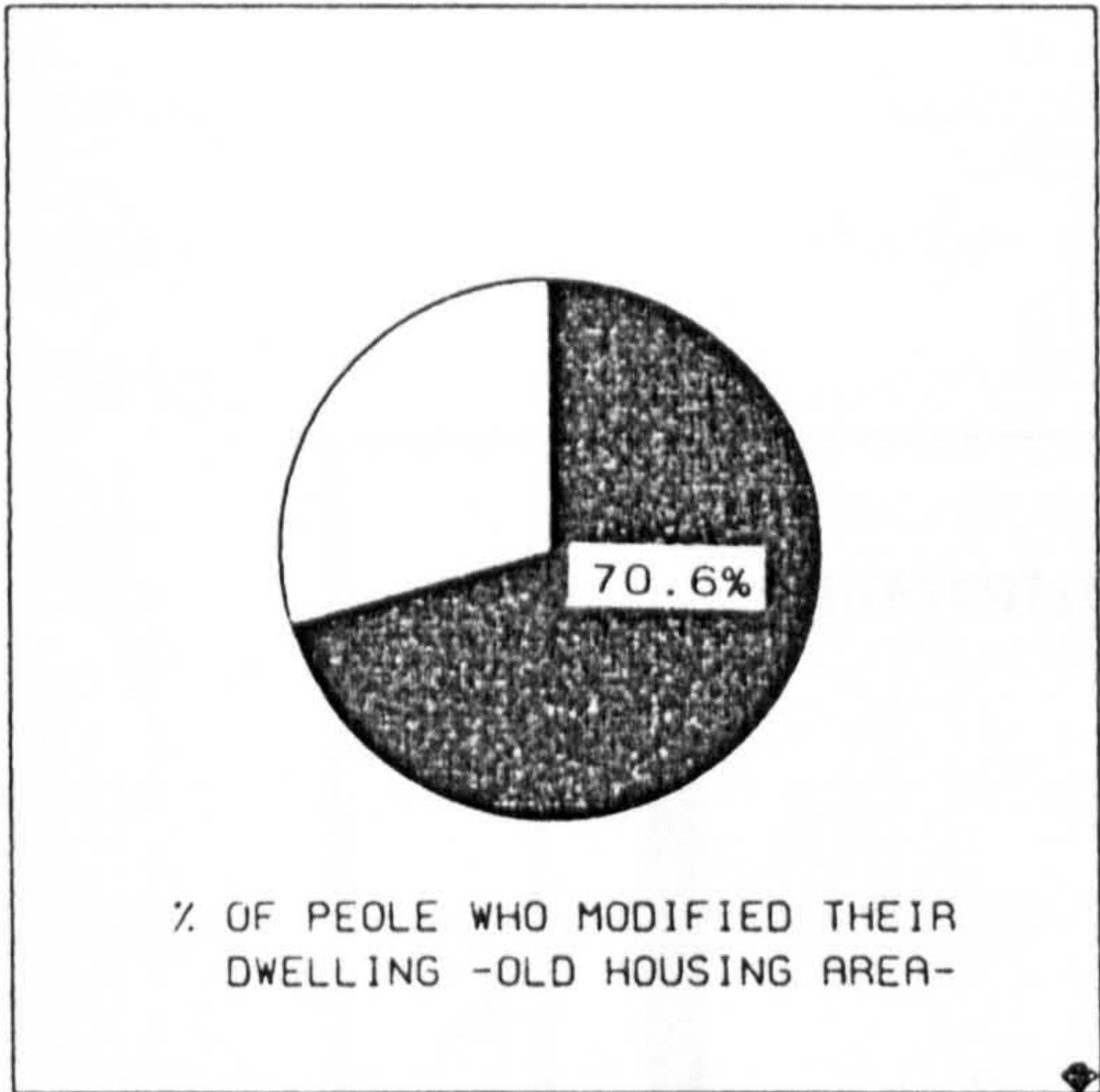
5.7 RESIDENTS' ATTEMPTS OR/AND DESIRES TO ALTER THEIR DWELLINGS

The notions of adaptation and control are not new. Perin (1970)[16] introduced the concept of behavioural adaptation as a way of assessing the appropriateness of a physical environment to human demands, and several writers have since then dealt with these two concepts [17].

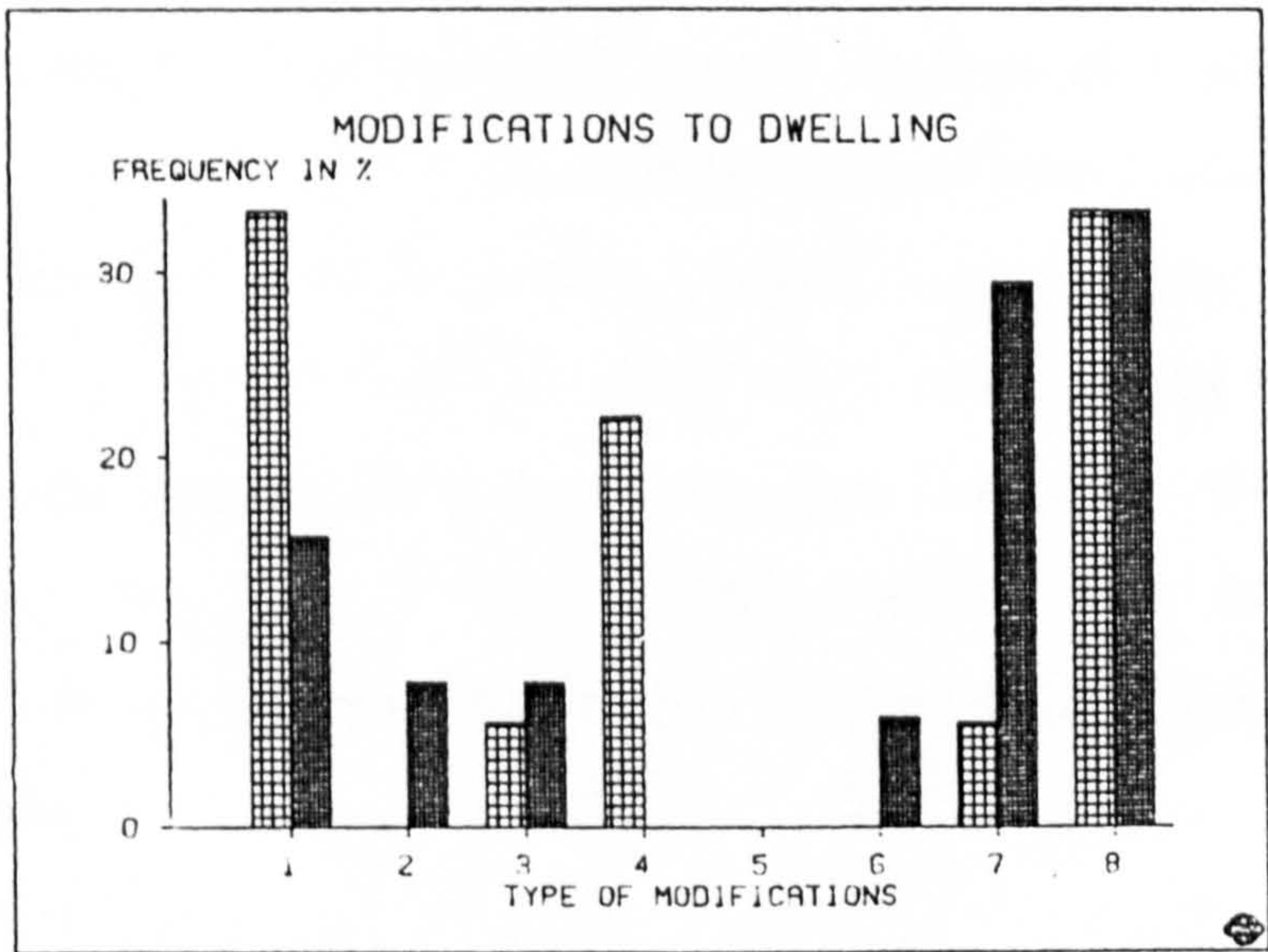
In this study, responses, in both the traditional and new settlement, show that users take an active role in their environment, interacting with it and sometimes adjusting it to suit changing situations. However, if the number of people who modified their dwellings is nearly equal in both settlements (70.6 per cent in the old and 62.5 per cent in the new, graph 5.1), the modifications carried out are quite different, which shows that the degree of inhibition in the two settlements is far from being the same. Indeed, the modifications carried out in the traditional dwelling are mainly fittings and consist of the introduction of household technology such as the installation of gaz which in turn led to the conversion of rooms into kitchen, or bathroom (graph 5.2).

This influence of household technology on house transformation and design is not unique to the Mozabite traditional house but happened everywhere around the world. Lawrence (1987)[18] showed how after

Graph(5.1): Control and physical adaptation to the housing environment.



Graph(5.2): Types of modifications.



RESPONDENTS IN
OLD HOUSING AREA



RESPONDENTS IN
NEW HOUSING AREA

- 1-Extra rooms
- 2-Subdivision of rooms
- 3-Addition of openings
- 4-Elimination of openings
- 5-Elimination of courtyard
- 6-Extension of courtyard
- 7-Conversion of rooms
- 8-Painting and decorating

the nineteenth century's economic prosperity in Australia domestic appliances and technology led to the transposition of the detached kitchen, washroom and toilet under the main roof. Another quite common modification carried out in the traditional house is the addition and/or subdivision of rooms. In fact this procedure is not new but is one of the characteristic of the traditional house to extend with the family. Extra rooms are usually built in the 'Ikomar' on the 'terrasse' or roof whenever the family expands. About 8 per cent of the respondents also reported the addition of openings. One has to bear in mind, however, that those are usually not windows as such but small openings to increase the ventilation of the house.

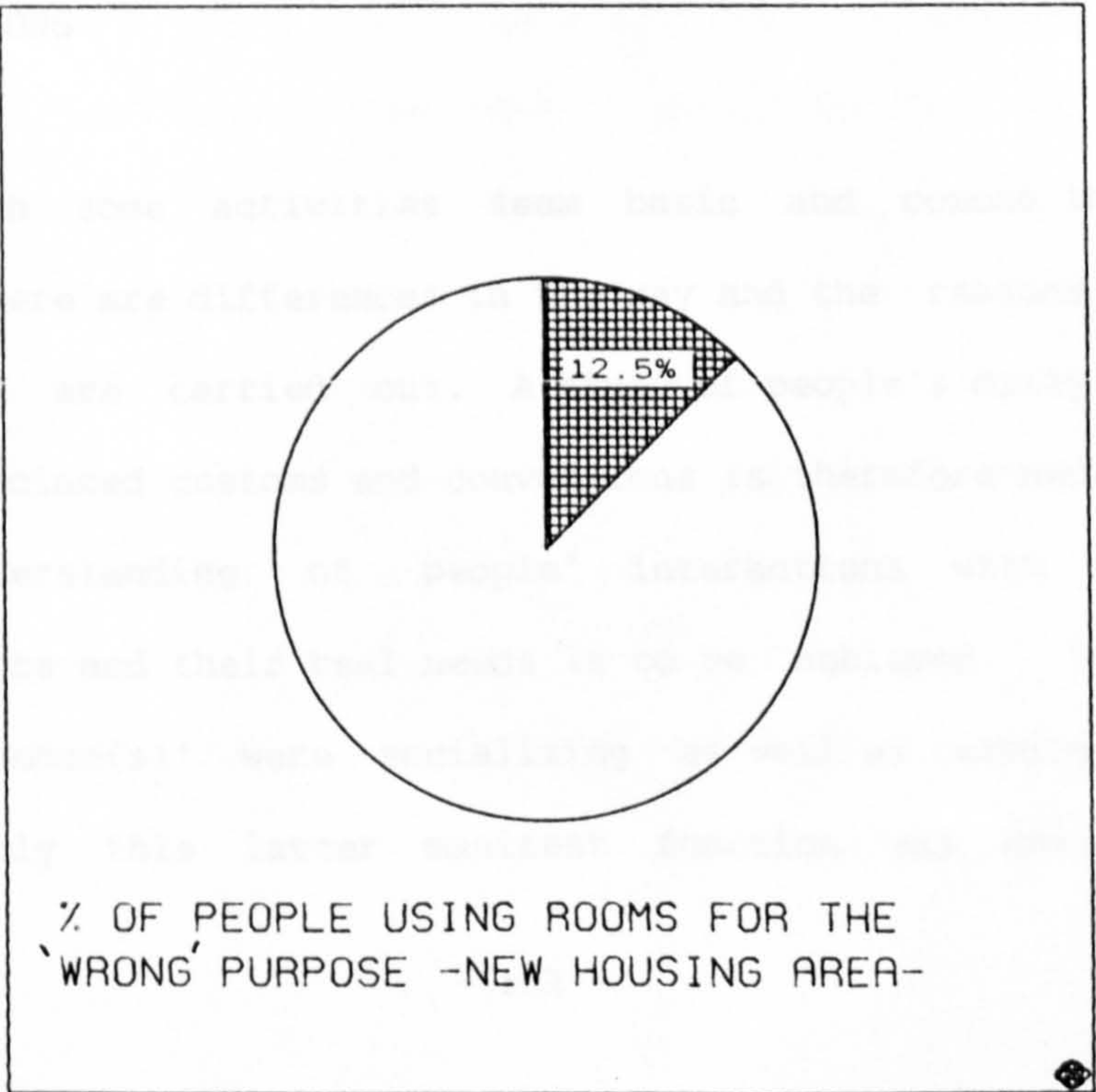
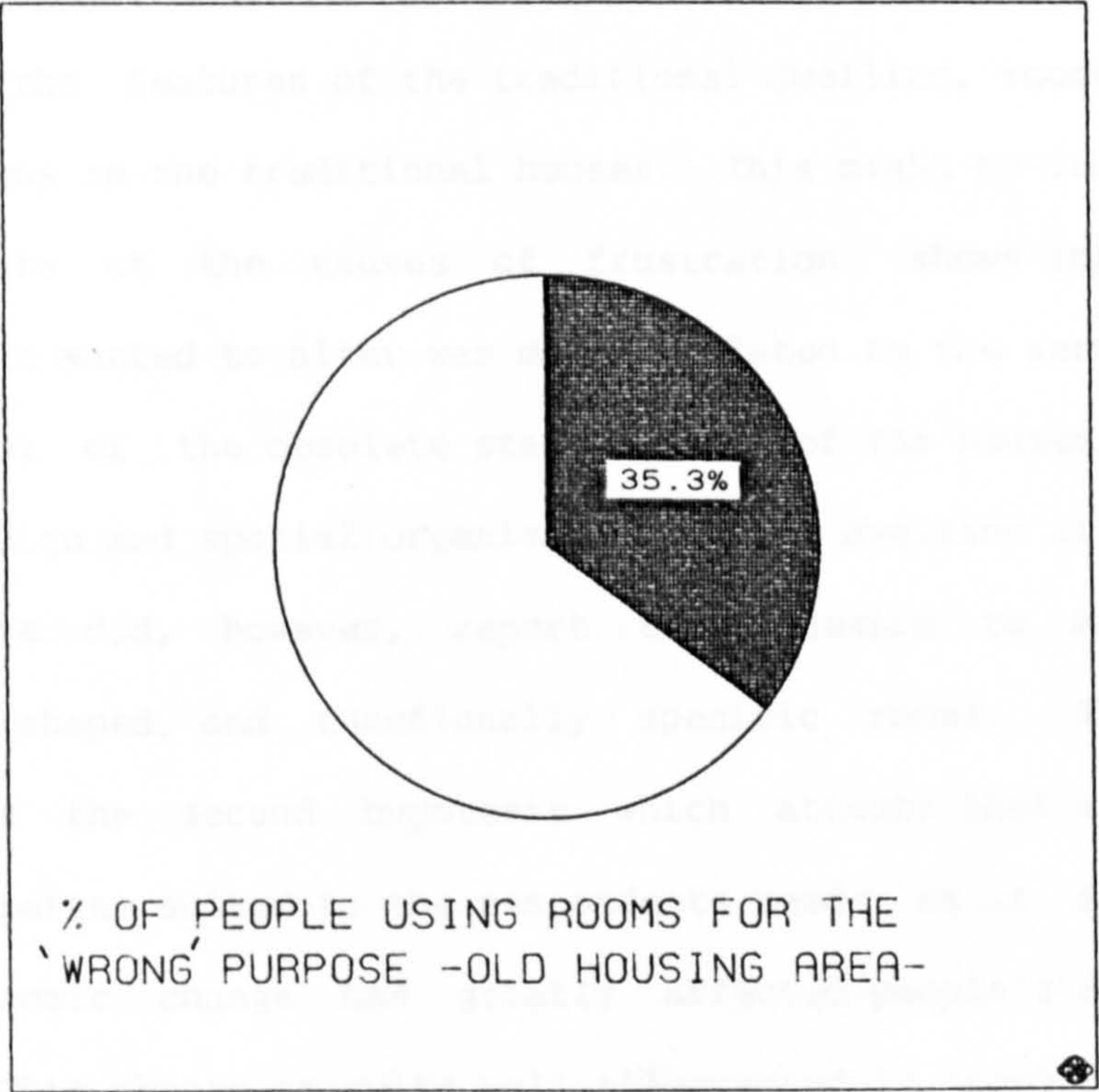
In the new settlement, however, most modifications are related to the dwelling's design and structure, and denote the designer's failure to satisfy the users needs. Indeed, 33 per cent of the respondents transformed half of the 'veranda' to an extra room, while 22.2 per cent added screens to their windows (graph 5.2). Indeed, the large unscreened windows on the ground floor flats show the designer's ignorance and/or neglect of the inhabitants strong need for social control and maximum privacy. In the same manner the transformation of one part of the courtyard or veranda into a room shows that due to the availability of the kitchen and other specialised rooms the need for the courtyard as a multi-purpose place has decreased which has been reflected in the reduction of its size. However, the fact that it (the courtyard) has not disappeared

completely suggest that the courtyard is still highly desired (see chapter 6). Furthermore, the need for air conditioning in the new flats attest its inadaptability to the local climatic conditions.

The high number of modifications tend to suggest that most users have managed in one way or another to adjust their dwellings to their specific needs. Examining graph (5.3) which represents the number of rooms used for the 'wrong' purpose (such as sleeping in the kitchen, for example) and the different kind of activities stopped or made very difficult, one realises that despite the number of modifications achieved, many frustrated desires for change still remain. About 88.2 per cent of the respondents in the old settlement. against 66.7 per cent in the new, would still like to change something or another but can not do it. The reasons behind such frustrations are mainly financial. In effect, 88.2 per cent of the respondents in the old settlement, and 50 per cent in the new one reported their inability to pay for the desired alterations, while 34.2 per cent of the dwellers in the Quartier des Anciens Moudjahidines, and 26.3 per cent in Sidi-Abbaz reported their reluctance to improve a rented dwelling. Most people would rather save their money to buy or more exactly to build their own dwelling, and do not want to invest money in a dwelling which does not belong to them, and therefore cannot be transferred to their descendants.

The high percentage of people (88.2 per cent against 66.7 in the new settlement) who reported their desire, but inability to change

Graph(5.3): Rooms used for the 'wrong' purpose.



some of the features of the traditional dwelling, suggests greater frustrations in the traditional houses. This might be true; however, an analysis of the causes of frustration, shows that what most respondents wanted to alter was mainly related to the servicing, and improvement of the obsolete state of most of the houses rather than to the design and spatial organisation of the dwelling itself. Many respondents did, however, report their desire to have bigger, regularly shaped, and functionally specific rooms. This finding challenges the second hypothesis which attests that a traditional house is better suited to the respondents needs, as it appears that socio-economic change has greatly affected people's attitudes and values. This change is quite well illustrated in graph (5.3), where 35.3 per cent of the respondents in the traditional settlement reported using some traditionally multi-purpose places for the 'wrong' purpose.

5.8 CONCLUSIONS

Although some activities seem basic and common to most human beings, there are differences in the way and the reasons why these activities are carried out. A study of people's daily activities, their associated customs and conventions is therefore necessary if a good understanding of people's interactions with their built environments and their real needs is to be achieved. For example, while 'hammam(s)' were socializing as well as bathing or cleaning places, only this latter manifest function was considered when

'hammam(s)' were eliminated from the new housing schemes. However, although individual bathrooms did, indeed, replace the need of a public bath, the elimination of the 'hammam(s)' meant that many women lost their only socialising place.

Another important fact that emerges from this study is that people take an active role in their environment, and try to control it in line with their evolving values and needs. This does not mean, however, that people would adapt to any situation. Human beings have limited attentional capacities and when the demands of a new environment exceed these capacities, people may fail to maintain equilibrium between ability to change and the new demands. In the new settlement of Sidi-Abbaz many respondents added screens to their windows and therefore managed to remedy to the designer's failure to provide the desired level of privacy. However, many more had to give up some activities such as weaving because the new design did not facilitate such activities. In a like manner, many dwellers in the traditional settlement attempted to accommodate their new needs by reorganising the different rooms' functions, and introducing new household technology. The great number of attempts to change the traditional dwelling shows that socio-economic change has influenced people values and attitudes towards housing. Modern household technology and furniture, for example, influenced greatly the different uses of places and led to many changes in people's conceptions of houses. In effect modern furniture not only led to the disregard for multi-functional spaces but also reduced the

flexibility of use so characteristic of the traditional house, as well as changes in the function of the courtyard. These findings refute the validity of the second hypothesis, and show that change affected many of people's attitudes towards housing. The next chapter is set to test this new assumption. It investigates people's attitudes towards their residential environment, their level of satisfaction and their environmental preferences.

5.9 NOTES AND REFERENCES

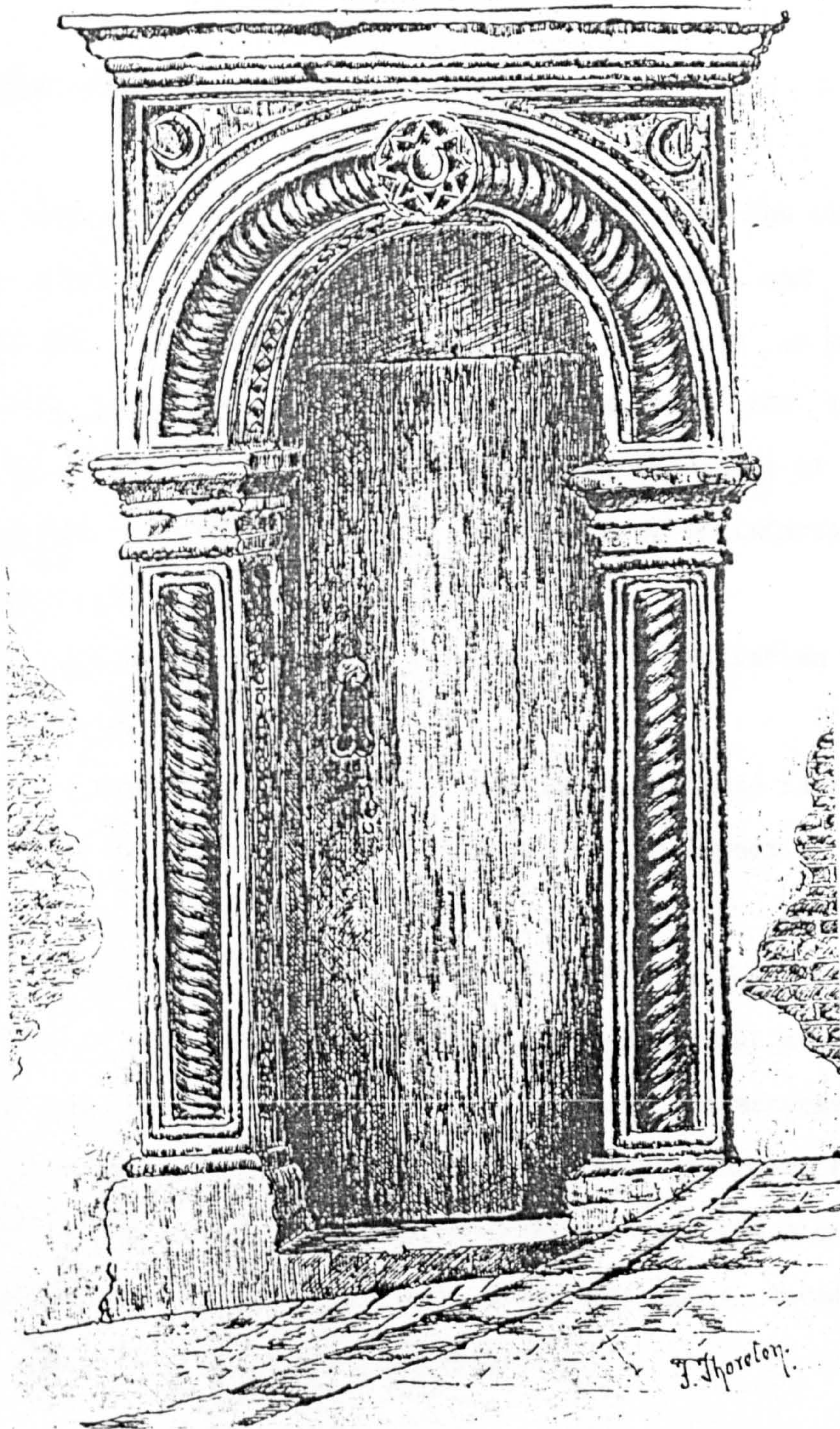
1. Porteous, J. "Environment and behaviour: Planning and everyday urban life." Reading, Mass, Addison-Wesley, 1977.
2. Hichcock, J. "Daily activity patterns: an exploratory study." In Ekistics 204, November 1972. pp.323-327.
3. Lofland, L. 'the modern city: spatial ordering.' In "Environmental psychology", Proshansky et.al, (eds.). New York: Holt, Rinehart & Winston, 1970. pp.508-527.
4. Rapoport, A. 'Cross-cultural aspects of environmental design.' In "Human behaviour and environment: advances in theory and research." Vol.4: environment and culture. Altman, I., Rapoport, A., and Wohlwill, J.(eds.). Plenum Press. New York, 1980. pp.7-42.
Lawrence, R. 'A more humane history of homes: research method and application.' In "Human Behaviour and environment: advances in theory and research." Vol.8: home environments. Altman, I., and Werner, C.(eds.). Plenum Press. New York, 1985. pp.113-132.
5. Stewart, J. "The future of planning theory - Whither urban design?" In Planning Outlook, Vol.24, University of Newcastle upon Tyne, 1982. pp.74-82.
Canter, D. "The psychology of place." Architectural Press. London, 1977.
6. Rapoport, A.(ed.) "The mutual interaction of people and their built environment." Mouton, The Hague, 1973.
7. Rapoport, A. "The meaning of the build environment: a nonverbal communication approach." Sage, Beverley Hills, CA, 1982. p.15.
8. Rapoport, A. "Human aspects of urban form." Pergamon Press, Oxford, 1977.
9. Hall, E. "The hidden dimension." Garden City, New York: Doubleday, 1966. p.162.
10. Ibid. p163.
11. Rapoport, A. 1982. op.cit.
12. Young, M., and Willmott, P. "Family and kinship in east London." London: Routledge & Kegan Paul, 1957.

13. Bourdieu, P. "The Berber house." In Douglas, P. (ed.) "Rules and meanings." New York: Penguin, 1973. p.103.
14. Ibid. p101. Shorter, E. "The making of the modern family." Fontana Books. London, 1976.
Donzelot, J. "La police des familles." Editions de Minuit. Paris, 1977. Translated to English by R. Hurley. 'The policing of families,' Hutchinson, London, 1977.
15. Perin, C. "With man in mind." Cambridge, Mass.: M.I.T. Press, 1970.
16. McCarrey, M. Peterson, L., Edwards, S. and von Kulmiz, P. "Landscape office attitudes: reflections of perceived degree of control over transactions with the environment." Journal of Applied Psychology, 59, 1974. pp.401-403.
Wohlwill, J. "Human adaptation to levels of environmental stimulation." Human Ecology, 2, 1974. pp.127-147.
17. Lawrence, R. "Housing, dwellings and homes." Wiley, 1987.

5.9.1 notes to diagram 5.1

1.
Jones, W. "World views: their nature and their function." Current Anthropology 13(1), 1972. pp.77-109.
Szalay, L., and Maday, B. "Verbal associations in the analysis of subjective culture." Current Anthropology 14(1-2), 1973. pp.33-50.
Szalay, L., and Bryson, J. "Measurement of psycho cultural distance: a comparison of American blacks and whites." Journal of Personality and Social Psychology 26(2), 1973. pp.166-177.
2. Michaelson, W., and Reed, P. "The theoretical status and operational usage of lifestyle in environmental research." Research paper no. 36. University of Toronto, Center for Urban and Community Studies, 1970.

CHAPTER SIX



ALGIERS: DOORWAY IN THE RUE BEN-ALI

CHAPTER SIX

USERS SATISFACTION AND ENVIRONMENTAL PREFERENCES

6.1 INTRODUCTION

The main objective of this chapter is to examine the relationship between specific features of the housing environment and residents' satisfaction levels and environmental preferences in each of the traditional and modern settlements, and hence test the second and third hypotheses of the study. Furthermore, the study of residents' satisfaction will not only compare the levels of satisfaction in the two groups, but will also attempt to identify,

- What factors contribute to make people satisfied with their residential environment.
- What is the relative degree of importance of these factors.
- Which of these factors can be modified by designers.

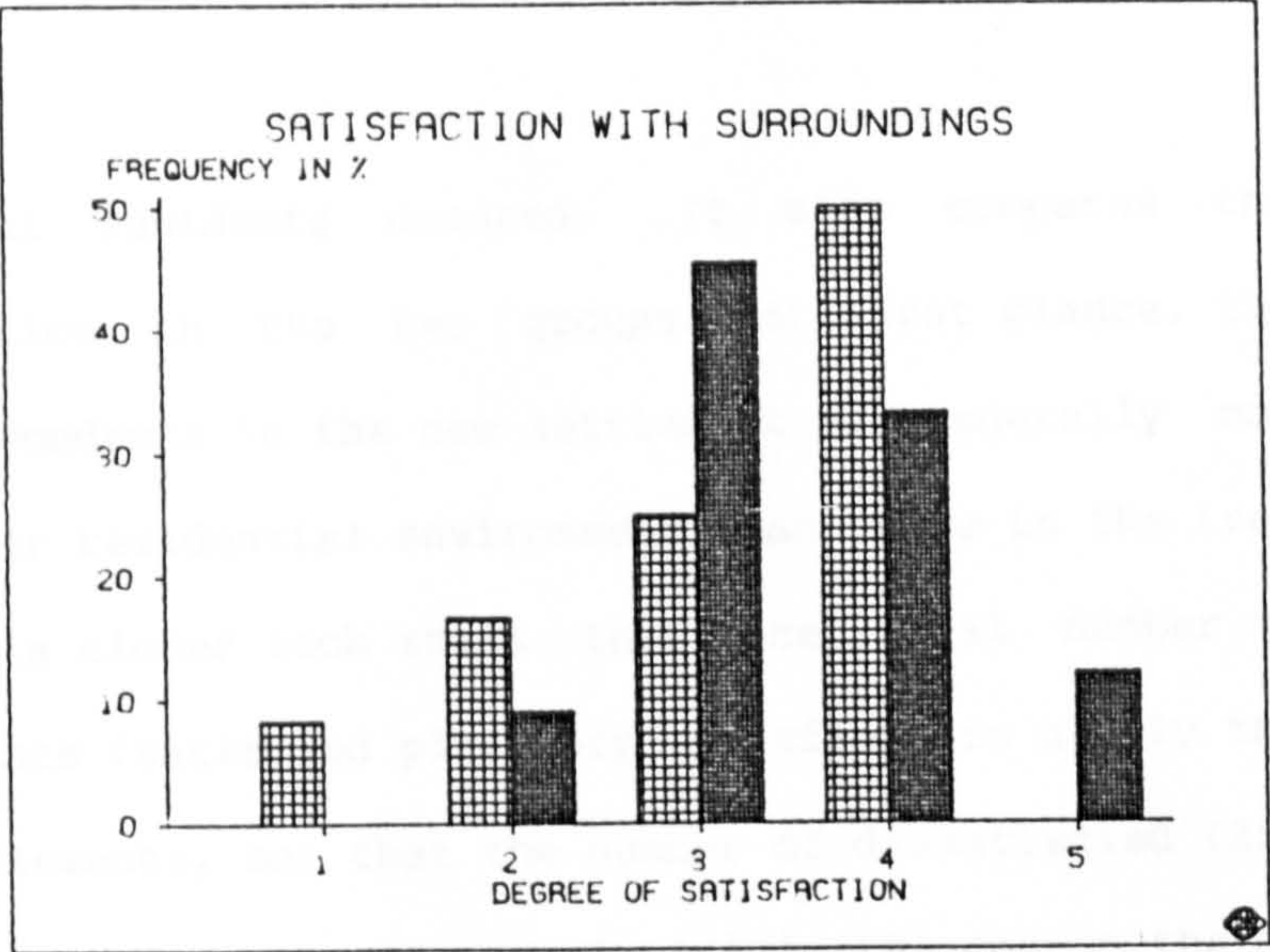
This investigation of residents' satisfaction levels and environmental preferences would be particularly useful as a response to the lack of environmental control that characterizes low and moderate-income users in Algeria. Indeed, because their housing is usually subsidised and assigned, they do not have the non-subsidized housing consumers' opportunity of asserting their locational and design preferences through market demand.

Furthermore, by evaluating the traditional and the modern environments and surveying users on what they like or dislike in their environments, and what their preferences are, further light may be shed on the respondents needs and expectations. However, this does not mean that investigating users' satisfaction would be enough to identify users' needs. The third chapter of this study showed that users' needs were unlikely to be identified through questioning only, and advocated a new approach for research which would not only investigate users' satisfaction levels and environmental preferences, but would also study users' adaptation, usage of places, and users' attempts to alter their residential environment since moving in. Multi-methods techniques were used in this investigation (see chapter three).


6.2 SATISFACTION WITH RESIDENTIAL ENVIRONMENT

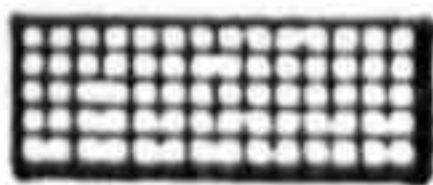
Numerous studies [1], emphasised the influence of both social (friendliness of neighbours, ethnic, racial or economic composition) and physical (housing style and conditions, landscaping, available facilities) features of a neighbourhood on people's satisfaction levels. In this study, in order to examine the relationship between specific features of the housing environment and residents' satisfaction with their place of residence, respondents were asked to state their level of satisfaction with thirteen variables. Graph (6.1) represents the frequencies for these variables and indicates where the significant differences between traditional and new

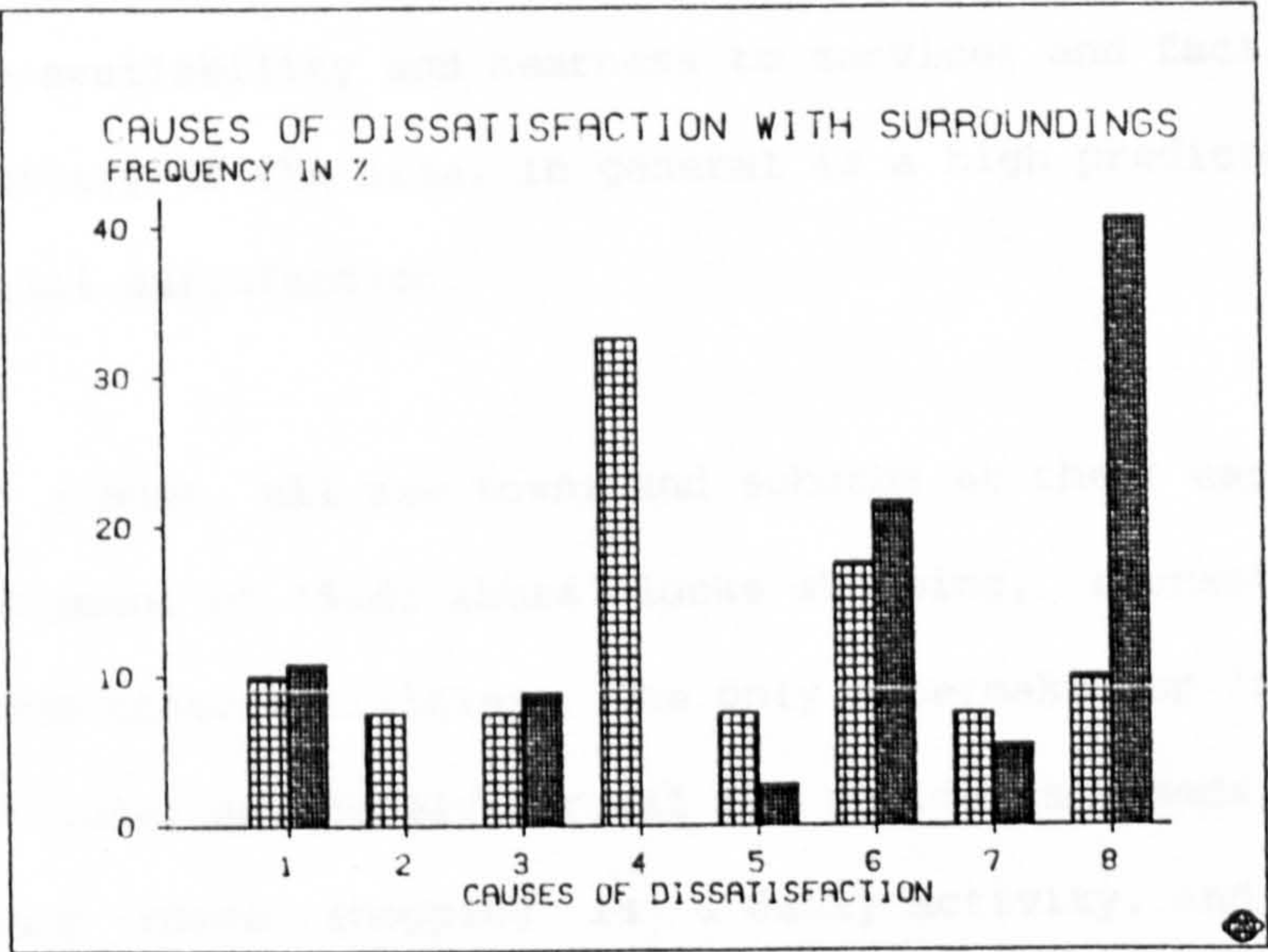
Graph(6.1): Satisfaction with surroundings



- 1-Very dissatisfied
- 2-Dissatisfied
- 3-Neither satisfied nor dissatisfied
- 4-Satisfied
- 5-Very satisfied

 RESPONDENTS IN OLD HOUSING AREA

 RESPONDENTS IN NEW HOUSING AREA



- 1-Layout of the area
- 2-Lack of parking facilities
- 3-Lackof recreational facilities
- 4-Lack of local shops
- 5-Lack of peace and quiete
- 6-Lack of children play areas
- 7-Type of neighbours
- 8-Lack of a good evacuation system

settlement residents occurred. It also compares the levels of satisfaction in the two groups. At first glance, the graph shows that respondents in the new settlement are generally more satisfied with their residential environment than those in the traditional one. However, a closer look shows that the total number of satisfied respondents (satisfied plus very satisfied) is nearly the same in the two settlements, but that the number of dissatisfied (25 per cent) in the new settlement is nearly triple the one in the old settlement where only 9.1 per cent reported their dissatisfaction with their residential environment. This finding again refutes the second hypothesis which postulates that a traditional settlement is better suited to people's needs than a modern one. The analysis of the components of residential satisfaction in the two neighbourhoods of 'Sidi-Abbaz' and 'the Quartier des Anciens Moudjahidines' indicates that the availability and nearness to services and facilities, the accessibility of the area, in general is a high predictor of overall residential satisfaction.

Like almost all new towns and suburbs at their early stages, the new settlement of 'Sidi-Abbaz' lacks shopping, recreational, health care, and other facilities. The only supermarket or 'Souk-El-Fellah' does not cater adequately for all the residents' needs, especially in a society where shopping is a daily activity, and where children sometimes as young as six years old or less are sent by their housebound mothers to buy the daily milk and bread. Therefore, it is quite understandable that 31 per cent of the interviewees reported the

availability and nearness to services and facilities as one of the most liked aspects of the traditional settlement; while, respondents in Sidi-Abbaz (32.5 per cent), most disliked the remoteness and isolation of the area and the lack of well developed commercial facilities, 'hammams', and medical facilities.

Another equally high predictor of residents' satisfaction is cleanliness and maintenance levels. As many as 40.5 per cent of respondents in the traditional neighbourhood of the 'Quartier des Anciens Moudjahidines' reported their dissatisfaction with their neighbourhood cleanliness levels, lack of good sewage system and the derelict conditions of the buildings. While respondents in Sidi-Abbaz who had experienced life in a poorly maintained area reported the cleanliness of their neighbourhood as one of the most satisfactory features of the area.

The importance of safety variables confirms findings from other studies [2]. About 17.5 per cent of the respondents in 'Sidi-Abbaz' criticized the quality of exterior space and its over-exposure to climate and traffic. The predominance of the car, its speed, are all seen as a threat to the residents' daily lives, especially those of children. Safety, and specially that of children was also the concern of 21.6 per cent of the residents in the 'quartier des anciens Moudjahidines'. These reported the overall derelict state of the area and the lack of a good sewage system (fig 6.1).

Fig(6.1): The dilapidation of the traditional settlement.



Many people reported the dilapidation of the traditional settlement as their main cause of dissatisfaction.



As far as social factors are concerned, friendliness of neighbours seems to be a high predictor of residential satisfaction. In both settlements respondents (29 per cent in the traditional settlement and 28.8 per cent in the new one) indicated the good neighbouring relationships prevailing in the area as having a great influence on their overall satisfaction with their housing environment. Underlying these good relationships, many people mentioned the mutual respect of privacy.

Privacy, mainly visual, is highly respected and deferred to, not only by members of the Algerian society but all around the Islamic world. To purposely see into a house from the street or from nearby buildings is considered by Islamic law as an intrusion into one's privacy and should be prevented. In the Quartier des Anciens Moudjahidines most of the respondents (70.6 per cent) were satisfied with their dwellings' privacy levels. The remaining 29.4 per cent who were not very happy complained about being seen by people from other houses when using the terraces. Indeed, it has to be remembered that the terraces or flat roofs in the 'Ksours' were designed to create a whole circulation pattern at roof levels. This circulation is reserved to women. However with the advent of television, external aerials have been mushrooming all over the roofs. With the sirroco blowing most of the time, regular adjustments of the T.V aerials is necessary. As this latter is usually done by men, some women (40 per cent) see it as an intrusion over their privacy. In Sidi-Abbaz, respondents were divided in their

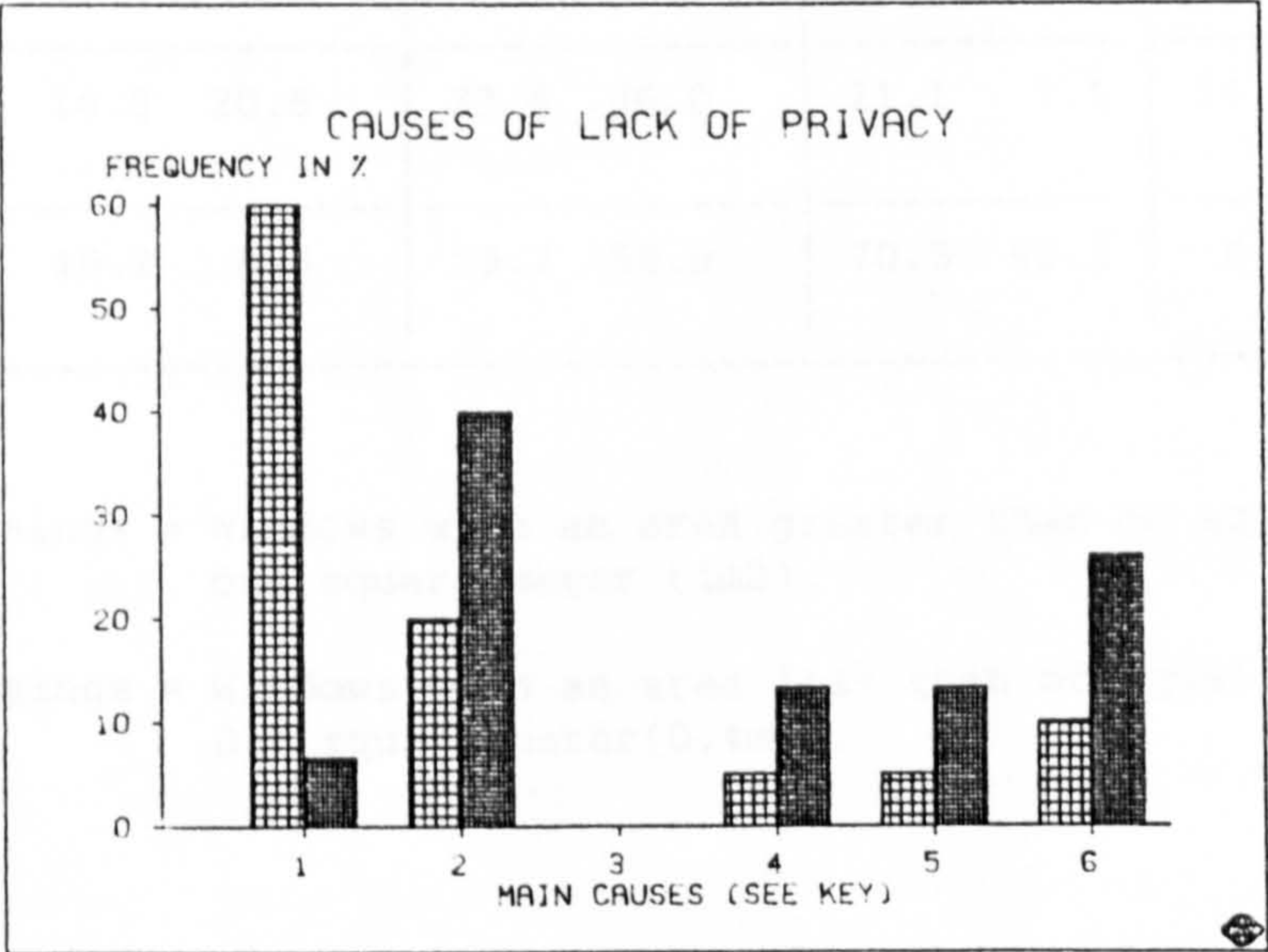
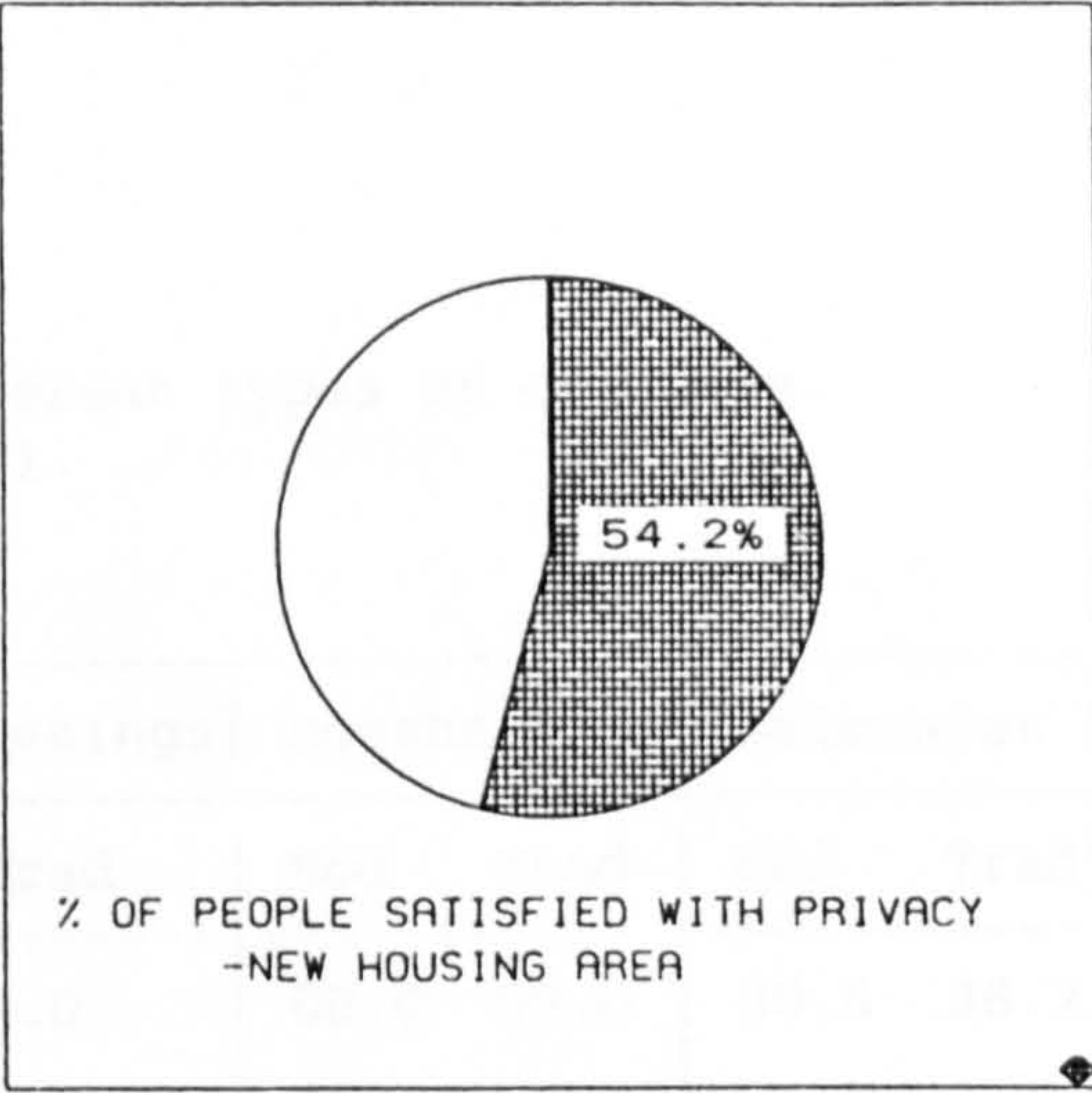
opinions, 54.2 per cent against 45.8 per cent rated their neighbourhood's privacy level favorably. However, the majority (80 per cent) agreed that the windows were the cause of such lack of privacy (graph 6.2). These findings were confirmed by a study carried out during the same time, in the same region [3].


Analysing the effects of privacy on the built form and the social structure, in Ghardaia, Lammeri (1987)[4] investigated the degree of satisfaction in both the modern and the traditional settlement, with different types of openings, in terms of providing privacy. His findings summarized in table (6.1) show that the majority of households in both areas are more satisfied with the privacy provided by small openings and 'mashrabyah' than with large openings and balconies.


Graph (6.1) sheds further light on residents' attitudes towards the attributes of their residential environment. It shows that three elements seem to be the main cause of the residents dissatisfaction in the two settlements:

1. The inadequacy of the sewage and the water distribution system in the traditional settlement.
2. The lack of local shops and commercial facilities in the new settlement.
3. The lack of children's recreational places in both settlements.

Graph(6.2): Satisfaction with privacy



 RESPONDENTS IN
OLD HOUSING AREA

 RESPONDENTS IN
NEW HOUSING AREA

- 1-Passerbys can see in
- 2-Neighbours overlook
- 3-Can hear people from outside
- 4-Can hear neighbours
- 5-Can be heard by neighbours
- 6-Crowding inside the dwelling

Table (6.1): Satisfaction with different types of openings.
(Source: Lammeri,1987).

Degree of satisfaction	Large openings		Small openings		Moushrabieh		Balconies	
	Mod	Trad	Mod	Trad	Mod	Trad	Mod	Trad
Very unsatisfied	26.1	46.0	00.0	2.0	00.0	00.0	30.6	36.2
Unsatisfied	47.0	24.6	10.6	4.2	00.0	00.0	49.1	48.6
Do not know	4.3	00.0	6.1	00.0	8.1	00.0	00.0	00.0
Satisfied	16.5	20.6	23.6	36.0	21.1	7.1	14.3	20.6
Very Satisfied	10.2	6.8	59.7	58.0	70.8	92.2	6.1	6.8

Note:

Large openings = Windows with an area greater than or equal to one square meter (1m²).

Small openings = Windows with an area less than or equal to 0.4 square meter(0.4m²).

Two clarifications need to be made here; first of all, what the respondents understand by children's recreational facilities are not parks or structured children's playgrounds (in fact these exist but are seldom used because most women are housebound and prefer to keep their children under their close supervision) but streets and courtyards. Secondly, although the lack of children's recreational facilities has been equally voiced in the two settlements, the underlying causes for such dissatisfaction are different. While the residents of the traditional settlement reported the deterioration of their area as the main cause of the transformation of their streets into unsafe playgrounds, the residents of the modern settlement were unhappy with the design of their streets which were over exposed not only to the scorching sun but also to the threat of the motorcar.

In summary, what emerges from this analysis is that respondents in the new settlement seem generally more satisfied with most features of their neighbourhood, and especially with the good and still new servicing systems. They are, however, very dissatisfied by the lack of local shopping facilities, 'hamamms' and the remoteness of the area and isolation in general. On the contrary, respondents in the traditional settlement of 'the quartier des Anciens Moudjahidines' are very dissatisfied with the derelict and obsolete conditions of their area, the deteriorated evacuation system, and the overall overcrowding and lack of hygien. This seems to have overshadowed many of the qualities of the old settlement. Although changes in values account for a large for such dissatisfaction. In effect, the

advent of the motor car, and other technological innovations changed many aspects of the residents' lifestyle and values and made, for example, the narrow and wandering streets no longer responsive to people's new needs.

6.2.1 Satisfaction with the dwelling

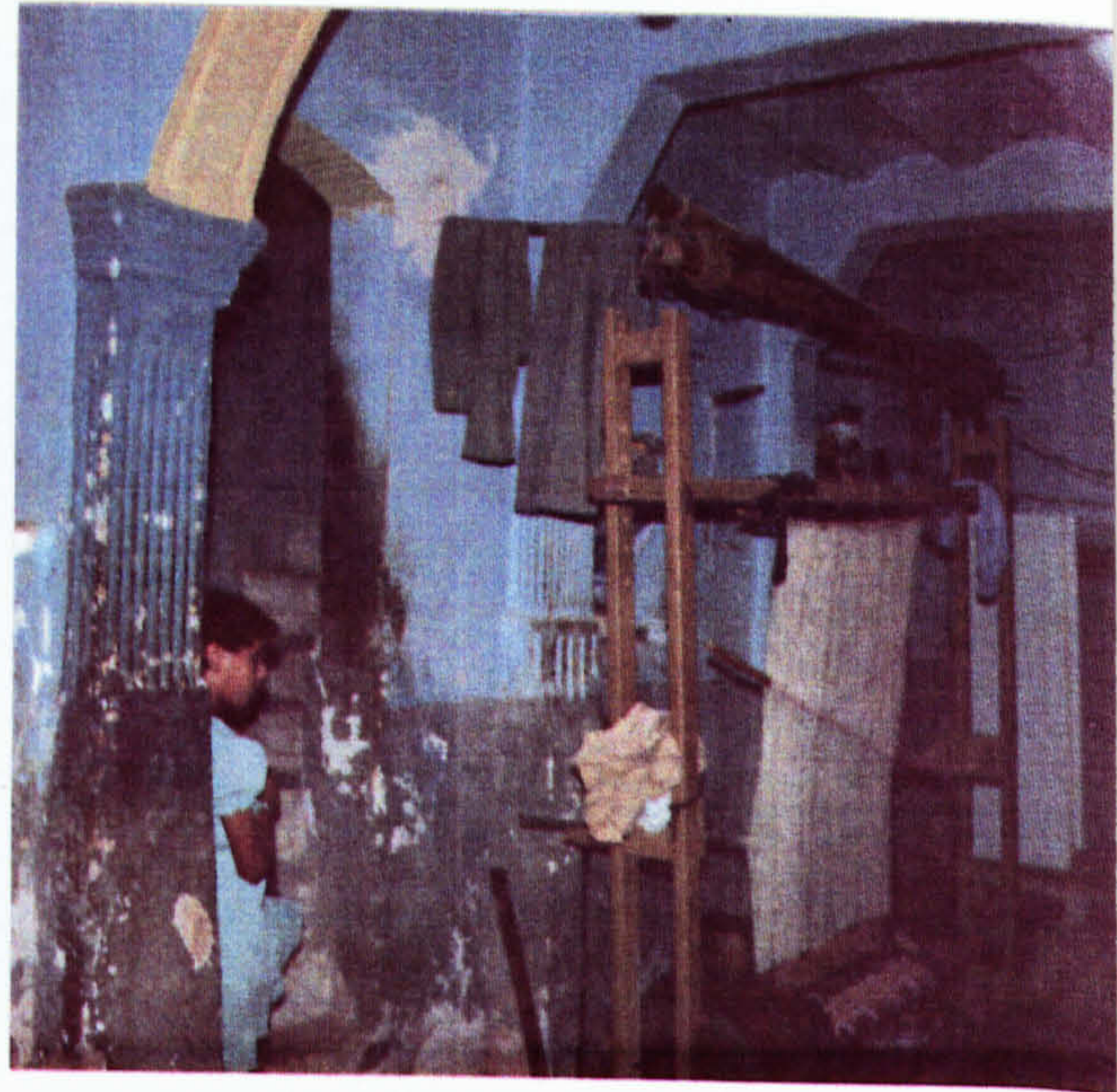
Many studies suggest that there is a strong relationship between housing satisfaction and satisfaction with life as a whole [5]. In the M'Zab, where by many of their chores women are bound to their homes, the attributes of the dwelling assume added importance.

The most salient problem to emerge from this study of dwelling satisfaction was that of the limited space. Whether the immediate concern was the size of the rooms or their number, the unifying theme was space. Size seems to be the main element of dissatisfaction with the dwelling in the traditional quarters of the 'Quartier des Anciens Moudjahidines' where 31 per cent of the respondents reported the small size of their rooms and their inadequacy to accommodate Western style furniture. Furthermore, with the increasing use of modern style furniture, the multi-functionality and flexibility of the traditional rooms has been decreasing and sometimes replaced by functionally specific rooms (fig 6.2). This in turn, has led to the need for a greater number of rooms. In the same manner, the furniture being designed to fit in a certain kind of setting, usually the conventional rectangular room, people are finding the irregular

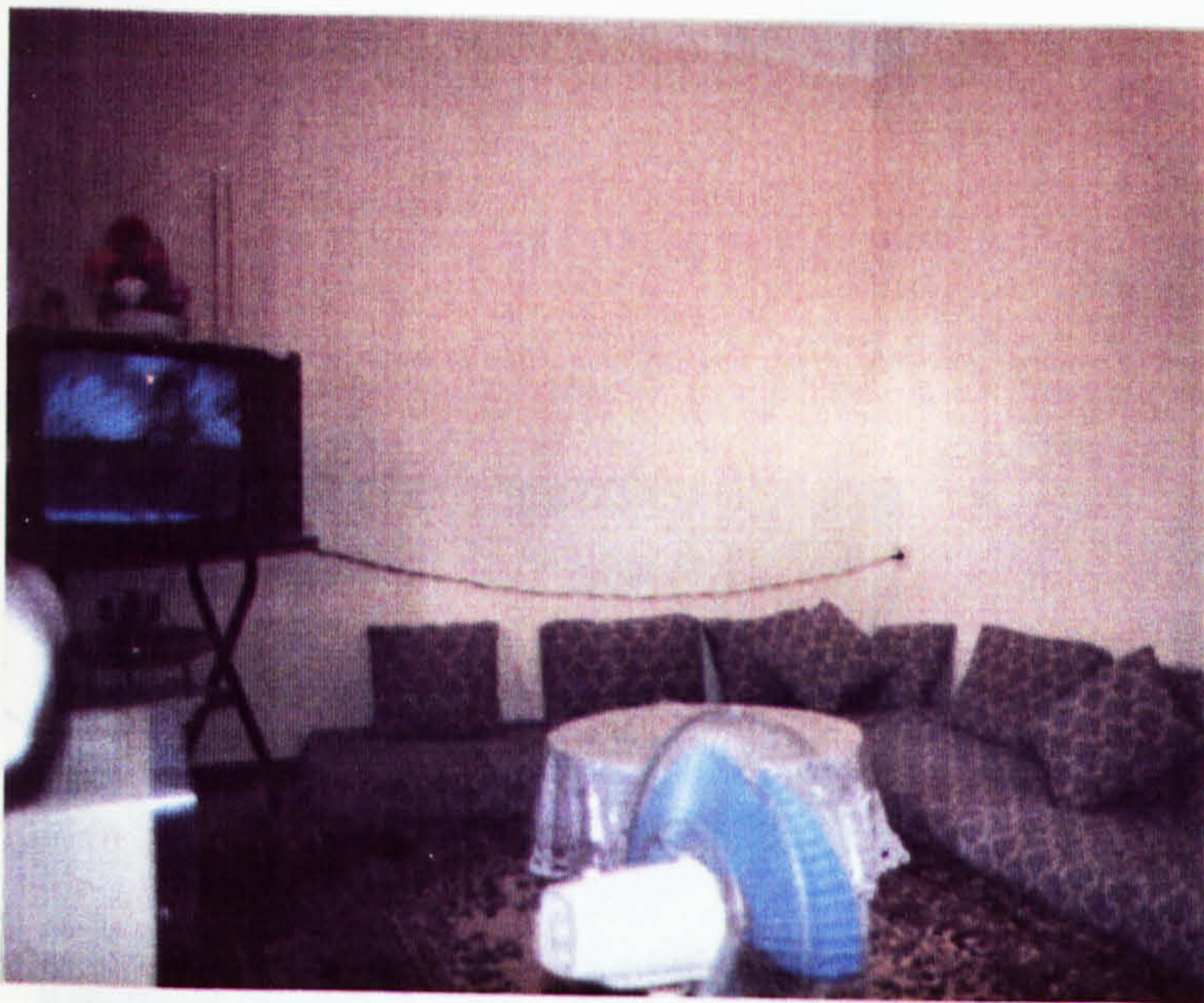
Fig(6.2): The impact of modern furniture on the flexibility of the traditional space.



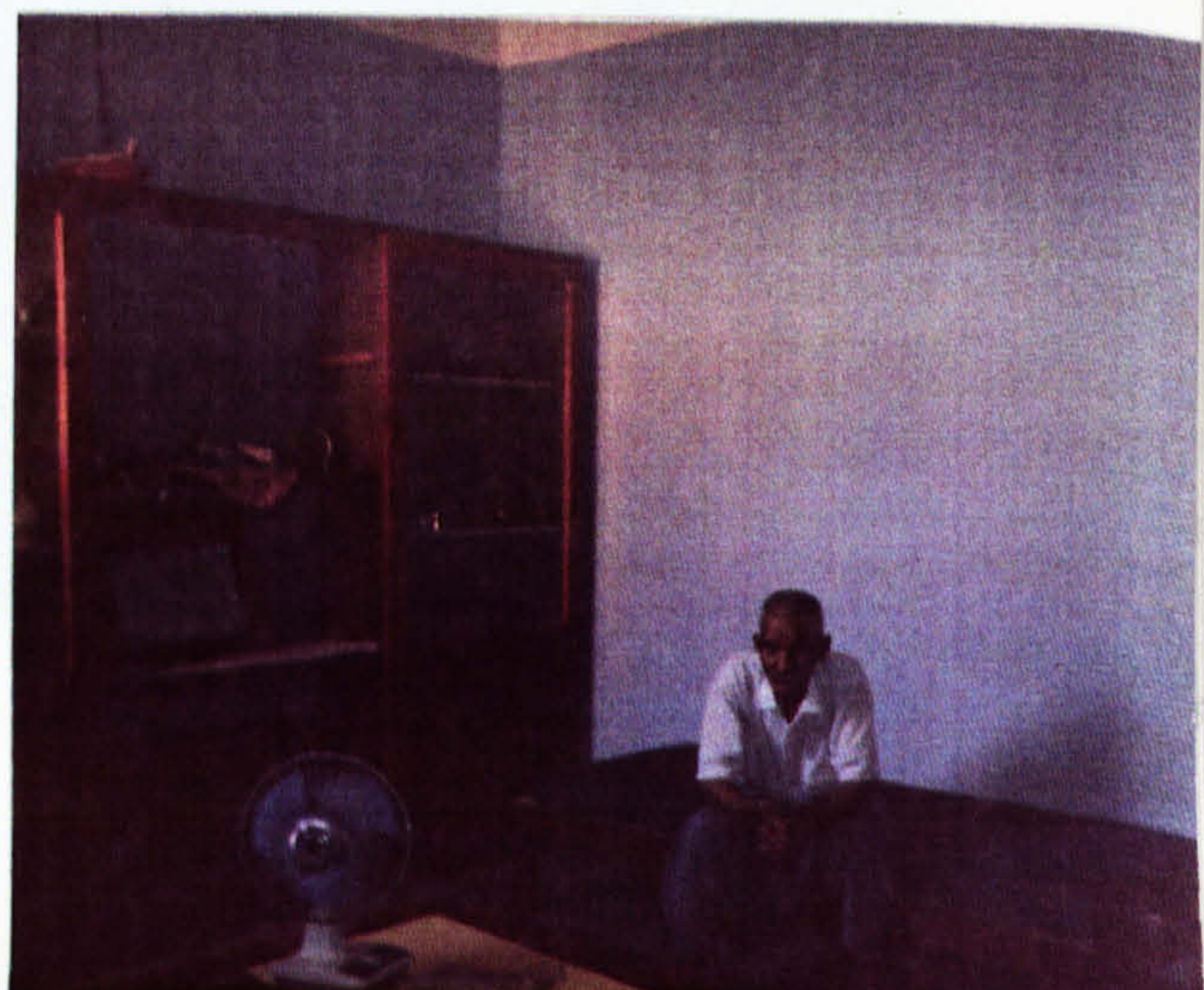
The courtyard as a receiving place



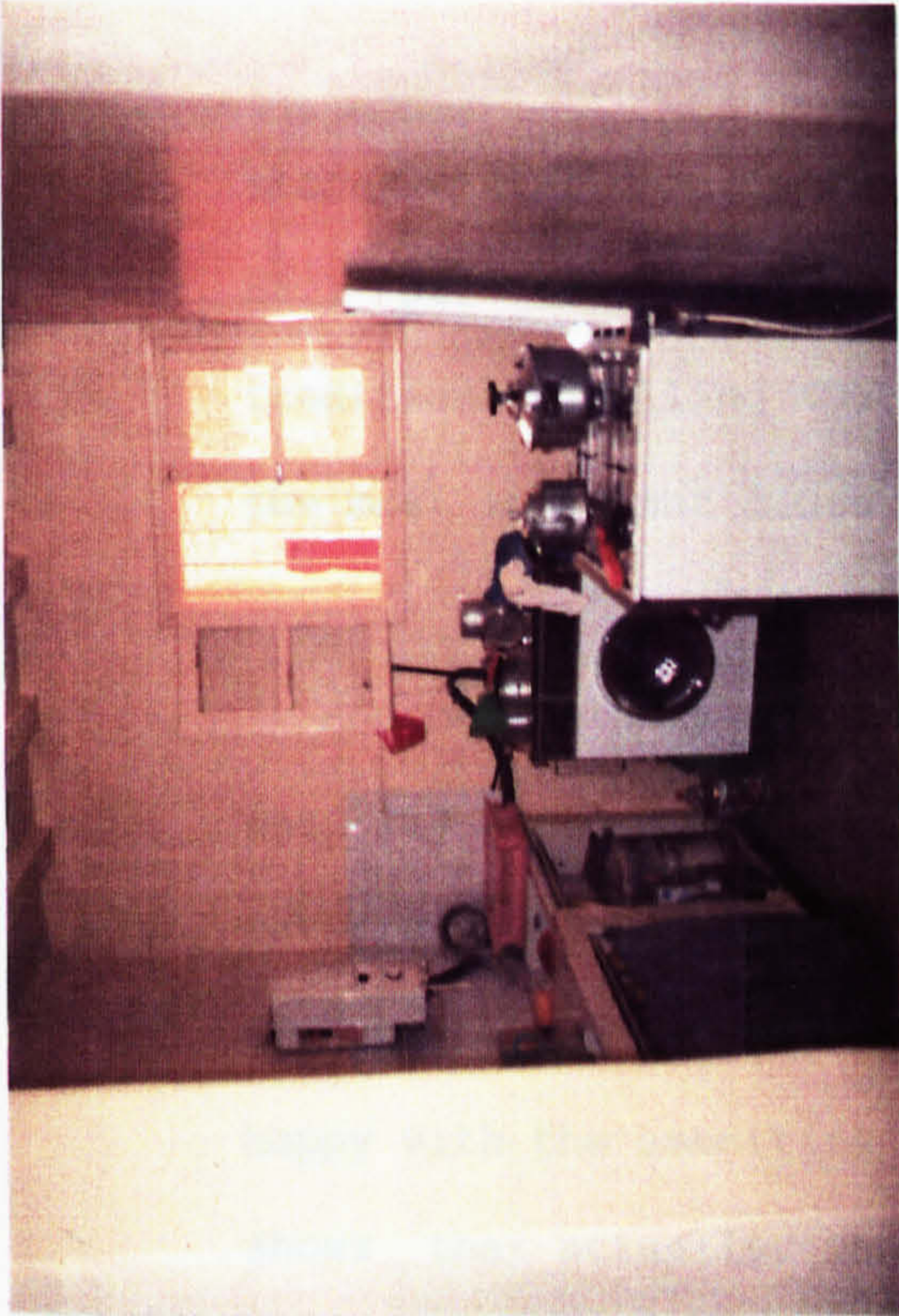
as a weaving place



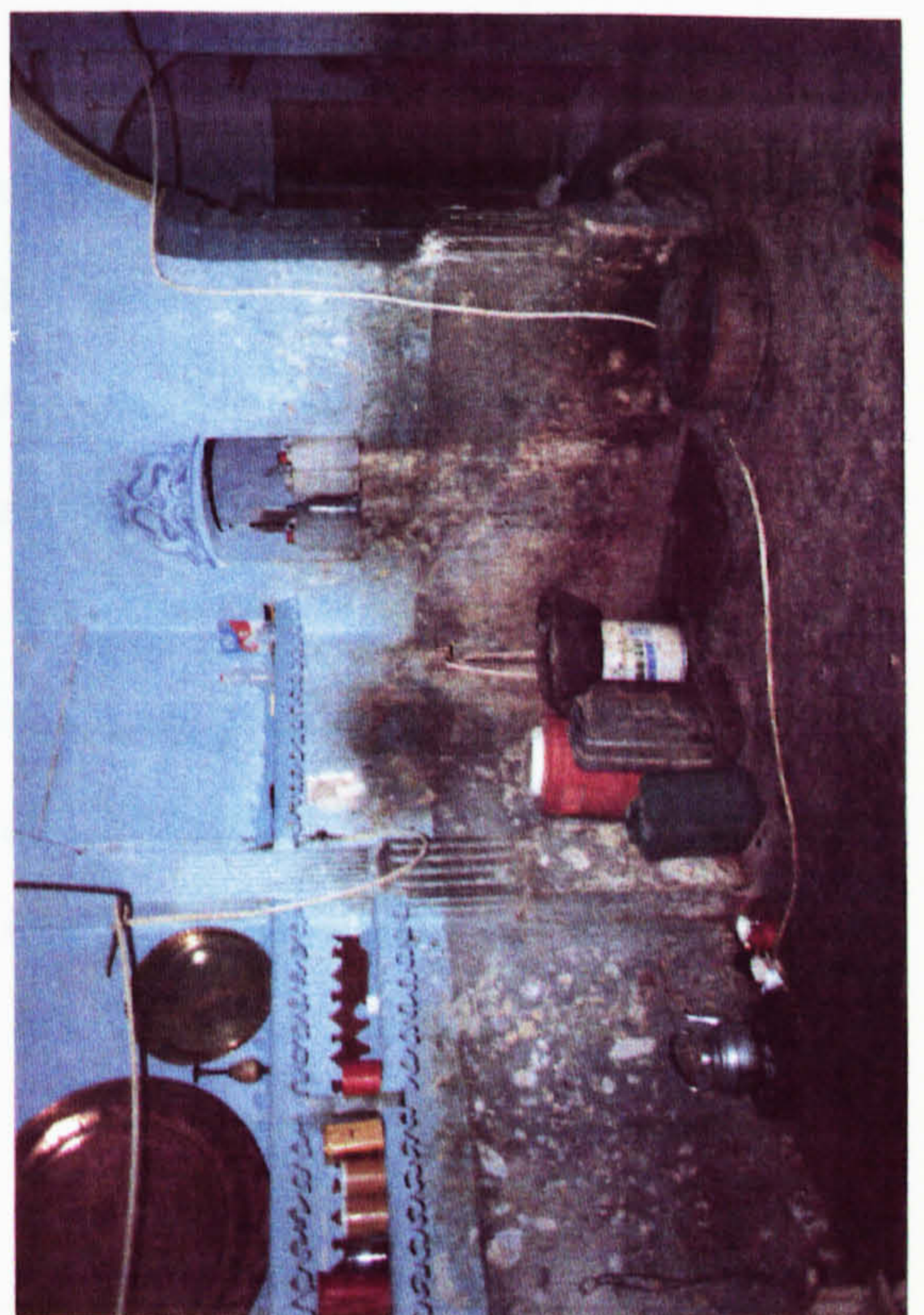
1,2 In the traditional house the courtyard is a multi-functional space but different places are used for specific functions (i.e. receiving, weaving)
3,4 In the new type of dwelling most activities are transferred to specialised rooms.



Fig(6.2): The impact of modern furniture on the flexibility of the traditional space.



1,2 Although the courtyard is still a multi-purpose place, the introduction of modern equipment led to the definition of more function-specific places.
3,4 Kitchen and bathroom in a modern flat.

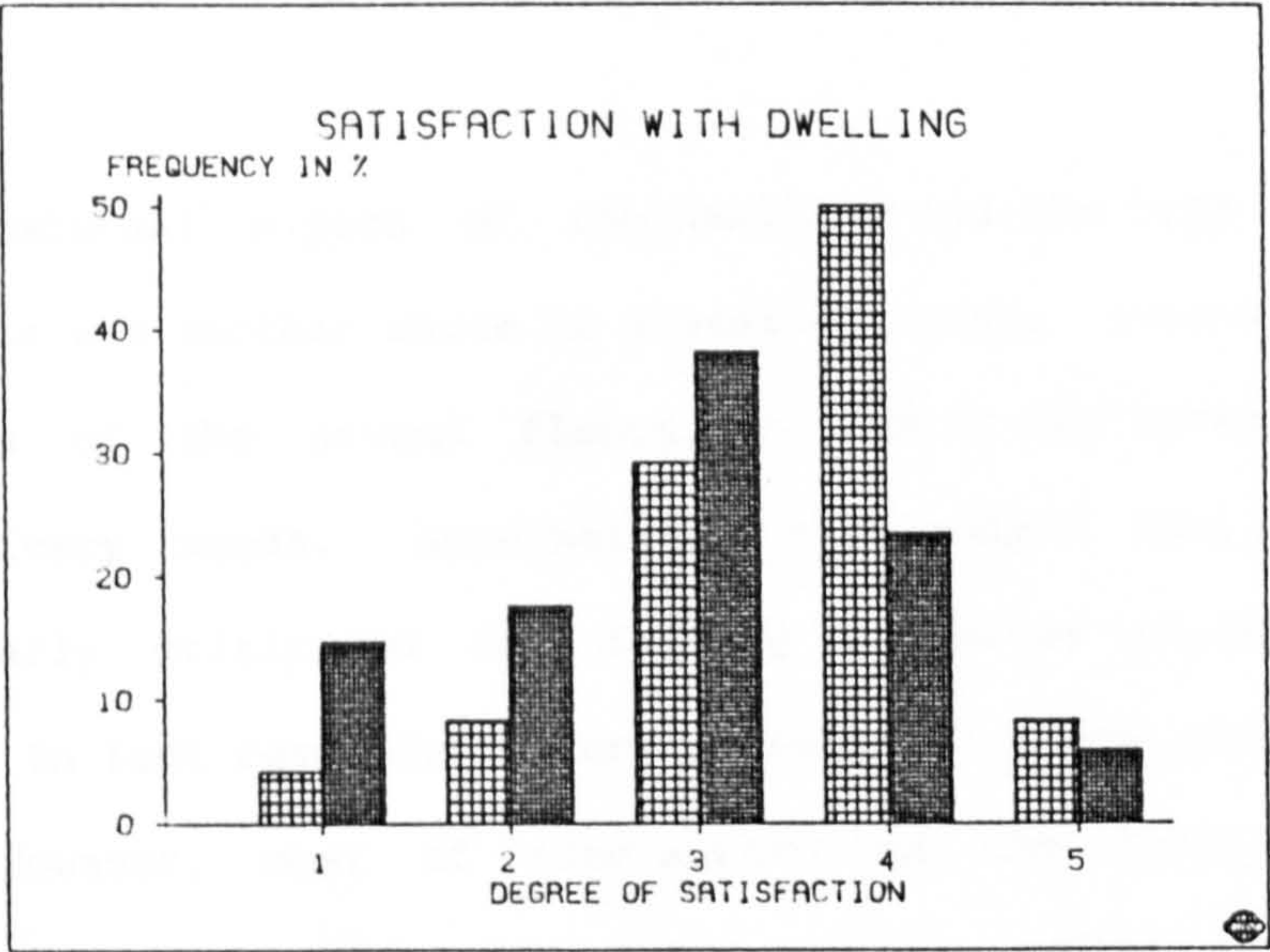


shapes of the traditional settlement no longer relevant. In fact, 54.1 per cent of the respondents mentioned the inadequacy of the traditional dwelling space to accommodate new domestic furniture as the most important cause of their dissatisfaction.

Another, highly voiced complaint about the traditional dwelling was its failure to comply with new household technology such as good water sewage and electricity systems, bathrooms and fitted kitchens (Graph 6.3). Conversely, the inhabitants of 'Sidi-Abbaz' seem to be happy with the amenities offered by their dwellings. Graph (6.3), shows that actually, the convenience of plumbing and electricity and the composition of the dwelling of specialised rooms are the main and only reasons for the respondents' satisfaction with their dwellings, who were, however, dissatisfied with most of the rest of the features.

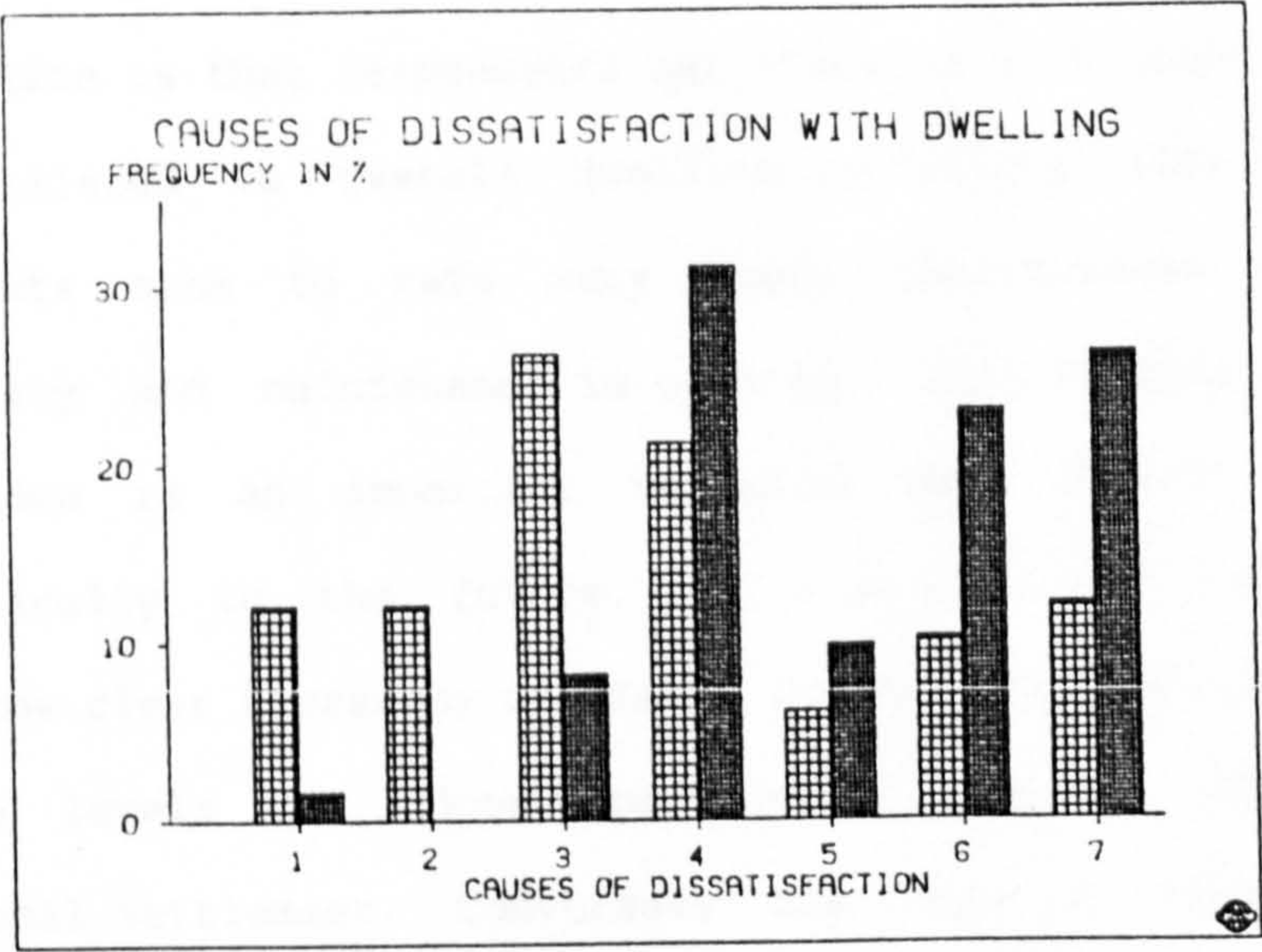
The most disliked feature of the modern dwelling was its layout. Most respondents complained about the central position of the kitchen and its direct communication with the children's bedroom (Fig 4.10). This not only led to the spreading of cooking odours, but also limited its 'usable or viable' area as most of it was used as a transitional space. Most women also complained about the backyard, which was over-exposed to the sun, and therefore could only be used for few hours of the day, early in the morning or after sunset.

Graph(6.3): Satisfaction with dwellings



- 1-Very dissatisfied
- 2-Dissatisfied
- 3-Neither satisfied nor dissatisfied
- 4-Satisfied
- 5-Very satisfied

- RESPONDENTS IN OLD HOUSING AREA
- RESPONDENTS IN NEW HOUSING AREA

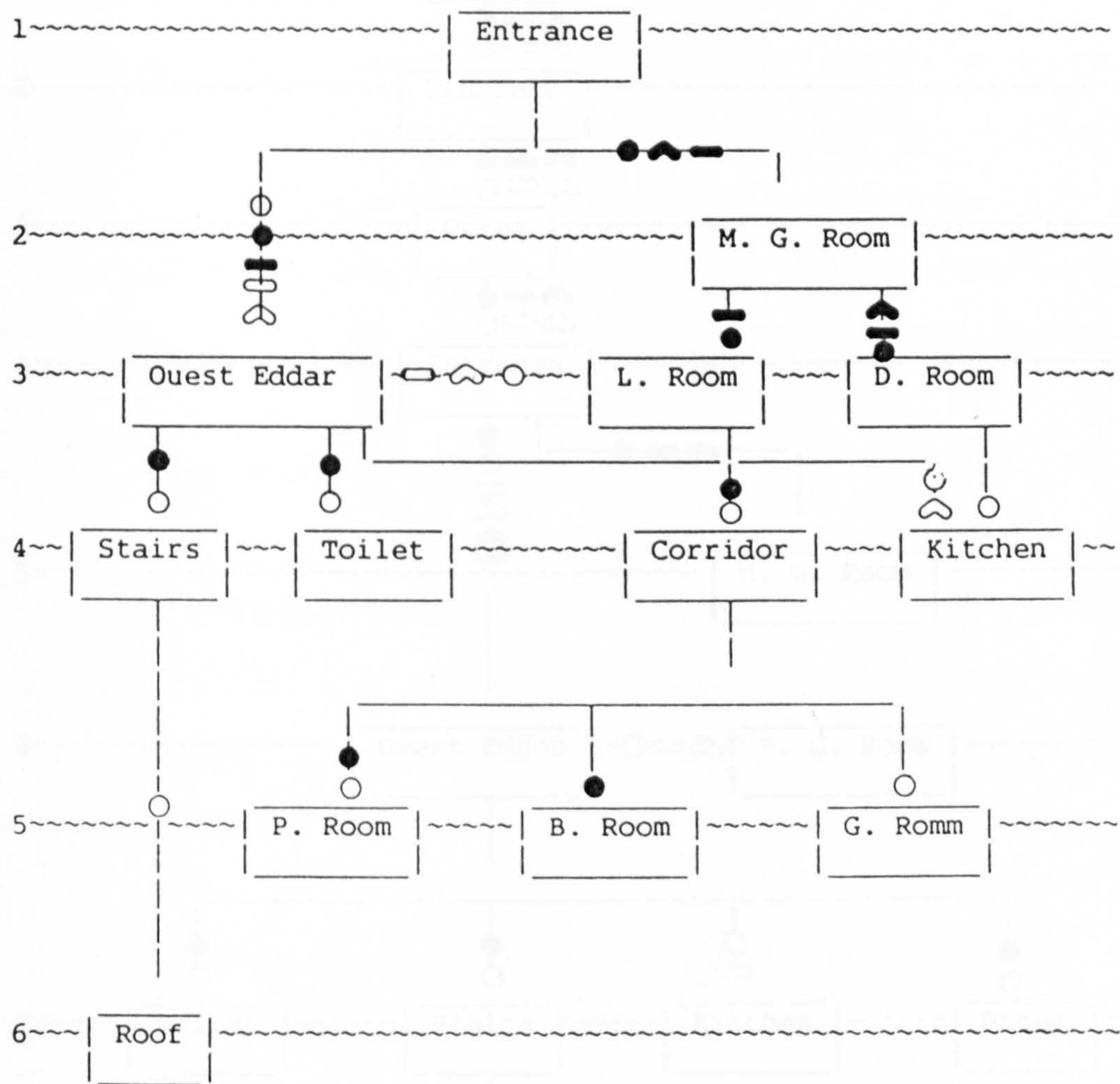


- 1-Location
- 2-Accessibility
- 3-Layout
- 4-Size
- 5-External aspect
- 6-Specialisation of rooms
- 7-Lack of good servicing (sewage and plumbing)

The external aspect of the dwelling and the type of windows in particular was another cause of dissatisfaction, specially for the residents of the ground floors, who had to add screens to achieve their privacy needs. Nonetheless, the modern dwelling was not particularly criticised for failing to achieve the desired privacy levels. In fact respondents were divided in their opinions (Graph 6.2). However, most of them agreed that the traditional dwelling provides more privacy than the modern one. Indeed, comparing the privacy levels in the two types of settlements, graphs (6.4 and 6.5) shows that due to the clear hierarchy of places the traditional house/settlement system is spatially better organised to achieve more indoor and outdoor privacy than the modern developments.

In summary, what emerges from this investigation of users' satisfaction is that respondents satisfaction with their dwelling is highly related to overall dwelling conditions, size and location. Respondents seem to rate very highly conveniences of plumbing, electricity and maintenance in general. This finding suggests that maintenance is an important variable that should be examined systematically in the future. It also indicates that many people prefer the clear hierarchy of places in the house/settlement system and the levels of indoor and outdoor privacy offered by the traditional settlement. Conversely the type of openings of the modern dwelling are disliked by most of the residents, and criticized for their failure to achieve the level of privacy desired by most residents. The courtyard is still seen by the majority of residents

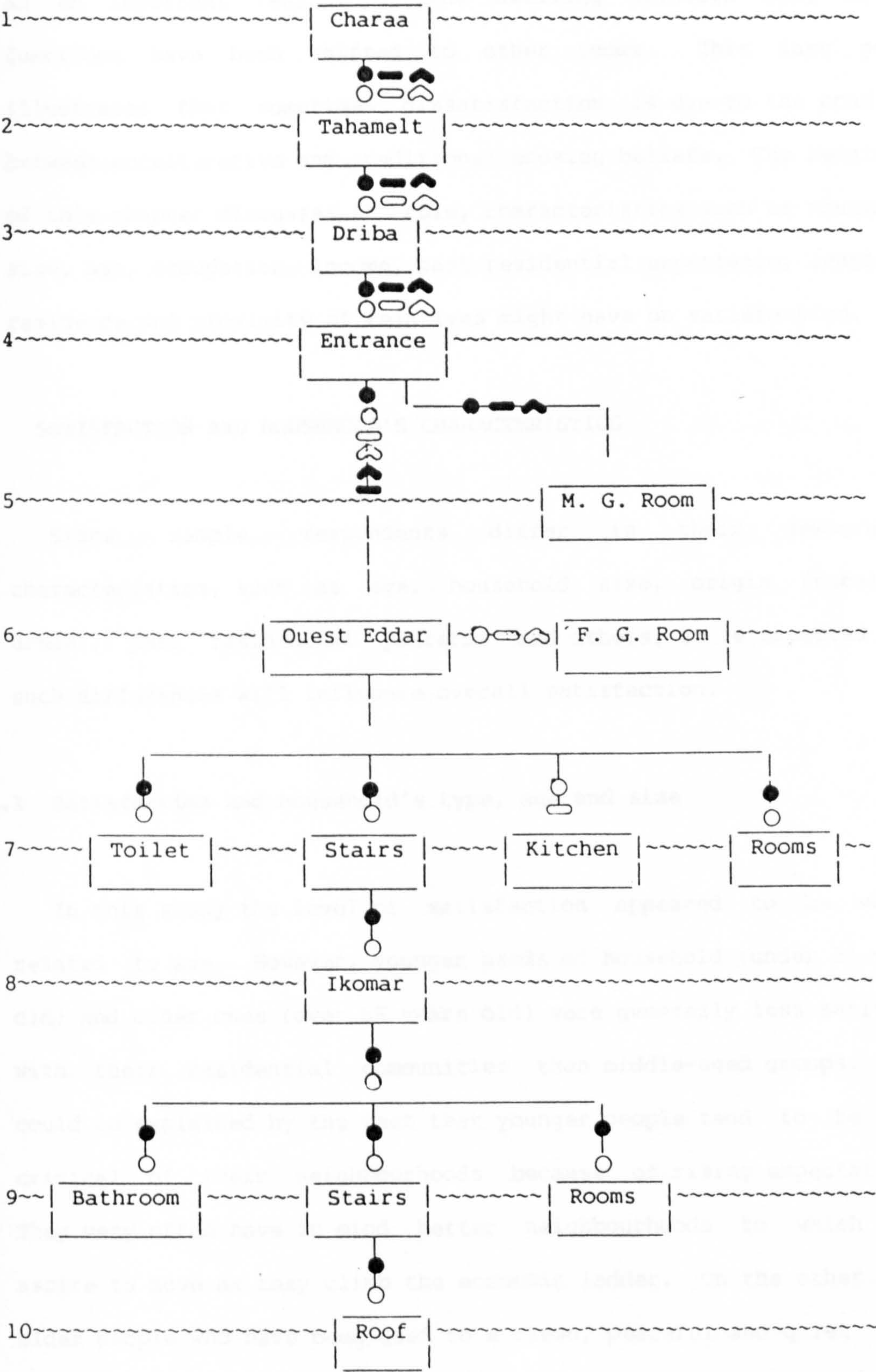
Graph(6.4):
 Level of Privacy in the Modern House.



	Resident	Relative	Visitor
Male	●	—	▲
Female	○	◻	◡

Graph(6.5):

Level of Privacy in the Traditional House.



as an important feature of the dwelling although many of its functions have been shifted to other rooms. This last point illustrates that sometimes dissatisfaction is due to the conflict between acculturative and traditional housing beliefs. The remainder of this chapter discusses the role, characteristics such as household size, age, occupation, income, past residential experience, length of residence and proximity of relatives might have on satisfaction.

6.3 SATISFACTION AND HOUSEHOLD'S CHARACTERISTICS

Since sample respondents differ in their demographic characteristics, such as age, household size, origin (rural or urban), past residential patterns and others, it is expected that such differences will influence overall satisfaction.

6.3.1 Satisfaction and household's type, age and size

In this study the level of satisfaction appeared to be weakly related to age. However, younger heads of household (under 35 years old) and older ones (over 55 years old) were generally less satisfied with their residential communities than middle-aged groups. This could be explained by the fact that younger people tend to be more critical of their neighbourhoods because of rising expectations. They very often have in mind better neighbourhoods to which they aspire to move as they climb the economic ladder. On the other hand, older people who have been used to a clean, peaceful and quiet life,

and who were used to having relatives as well as community services and facilities within easy access, have witnessed a 25 year explosion into a large metropolis, where crowding, noise, traffic jams, car accidents and dispersion are the norms. Most of them are likely to have been affected by these changes, and this in part, may explain their relatively low level of satisfaction, specially with the new settlement.

Household size, on the contrary seems to have a strong effect upon the residents' judgement of the prevailing conditions in their communities in general and their dwelling in particular. Indeed, 42.9 per cent of the respondents gave 'crowding inside their dwelling' as the main cause of their dissatisfaction with their dwellings.

6.3.2 Origin, type of previous dwelling and satisfaction

Examining the physical, social and psychological factors that inhibit or foster residents' satisfaction with the design and management of a number of housing developments in the United states of America, Francescato et al (1979)[6], found that the experience of the respondents with prior housing and the comparison between the development in which they lived and other housing available in the community were very strong predictors of overall satisfaction. In like manner, findings of this study suggest that the residential background and past experiences of dwellings seem to have a quite

strong influence on the respondents' attitudes towards their actual environments. Indeed, the majority of people who reported their satisfaction with the traditional environment came either from the 'Ksours' (33.3 per cent) or the neighbouring extensions (40 per cent), while the largest single group of the dissatisfied ones 40 per cent came from other towns mainly in the North (tables 6.2 and 6.3 in appendix III).

Moreover, examining the relation between satisfaction and previous type of dwelling it emerges that most satisfied respondents in Sidi-Abbaz were previously living in flats (75 per cent); while those satisfied with the dwellings of the Quartier des Anciens Moudjahidines came from tents and 'bidonvilles' (40 per cent), from farms (33.3 per cent) or from courtyard houses (27.7 per cent, see table 6.4 and 6.5 in appendix III). This last percentage, although low does not mean that the traditional dwelling is disliked by the people who experienced it. In effect, a study of the main reasons for dissatisfaction show that what those people are dissatisfied with is not the traditional house itself and its layout, but its derelict condition (graph 6.3).

6.3.3 Length of residence and satisfaction

Examining the tables(6.6 and 6.7, Appendix III) one would conclude that the shorter the length of residence, the greater the satisfaction with the dwelling. Most of the inhabitants of Sidi-Abbaz were relocated from derelict houses, and are still excited by the new amenities in their dwellings. Table (6.7) shows that 50 per cent of the residents who have spent less than a year are very satisfied, while 50 per cent of those who have spent more than a year are just satisfied. In the same way, 66.7 per cent of the respondents who have spent less than ten years in the Quartier des Anciens Moudjahidines are satisfied, while those who have spent more than ten years reported that the houses were too old and were less satisfied.

Postulating that, the longer residents lived in a dwelling, the more satisfied they are with it, is not supported in this particular case. Maintenance, or more exactly the lack of it, seems to be one of the main reasons for such attitudes. Indeed, most tenants believe that maintenance is the duty of the landlord (in this case the local housing authorities) and do not believe in 'wasting money' on a flat which does not belong to them. It is thus quite understandable that the longer they live in a place, the more deteriorated it becomes, and the less satisfied they are.

Consequently, tenure has a quite strong influence on satisfaction. The open ended answers show that many people gave ownership as the main reason for their satisfaction with their dwellings. As one woman said: "At least it belongs to us" Conversely, high rents added to the degree of dissatisfaction.

6.3.4 Proximity of relatives and satisfaction

Proximity of relatives does not seem to have a strong effect on residents' evaluation of their neighbourhoods (tables 6.8 and 6.9). This is not very surprising as in Muslim societies, although quarters are usually occupied by members of the same large extended family, there is a strong tradition of neighbouring on the basis of mere propinquity. The Qur'an itself encourages good relationships between neighbours [7]. In the traditional settlement where most residents have spend at least a decade in the neighbourhood, many repondents spoke enthusiastically of their fellow neighbours, in some cases even with the claim that they sorely missed each other when one was away. However, findings suggest that in both settlements the maintenance of ties to kin is very important. Residents of 'Sidi Abbaz' often 'commute' to the parents or family home during non-work periods. Furthermore, most respondents reported that they visited relatives or relatives visited them at least once a week. One has to mention however, that in the quartier des Anciens Moudjahidines, some respondents mentioned the presence of relatives as one of the main reasons of their satisfaction with their decaying neighbourhood.

6.4 HOUSING PREFERENCES

Residential preferences refer to the kinds of areas, locations and dwellings in which people want to live. People generally have a preference for the dwelling type, the neighbourhood in which it is located and its general location within the urban area. Knowledge about these preferences could be very helpful towards a better understanding of the changes in people's living environments as well as towards providing a residential environment that meets people's needs and desires.

The attempt here is to identify residents' attitudes towards selected elements of the house/settlement system. For reasons discussed earlier (see chapter 3) such as gathering more complete information about people's preferences and choices under 'real life' constraints, a greater involvement of the respondents and breaking the monotony of the questioning process, 'Trade-off-gaming techniques' were used as the main tools for preference assessment.

6.4.1 The courtyard

Many studies have indicated that people prefer to live in single-family detached housing [8]. This preference seem to be shared by most people regardless of income, household type and cultural background. Michelson (1977)[9], suggests that this image of the ideal home, is the result of the strong influence of the

media, along with individual observations during travel and visits to friends and relatives who live in single family houses.

As clearly shown in graph (6.6) the overwhelming majority (87.9 per cent) of the respondents in this study indicated their preferences for single family courtyard houses. The reasons given by the respondents for their dwelling's type choices were quite varied. However, one reason which came back quite often was that of tenure. Many respondents chose the single family courtyard house because they found the idea of owning a flat without owning the land on which it was built quite illogical. To use the words of a respondent:

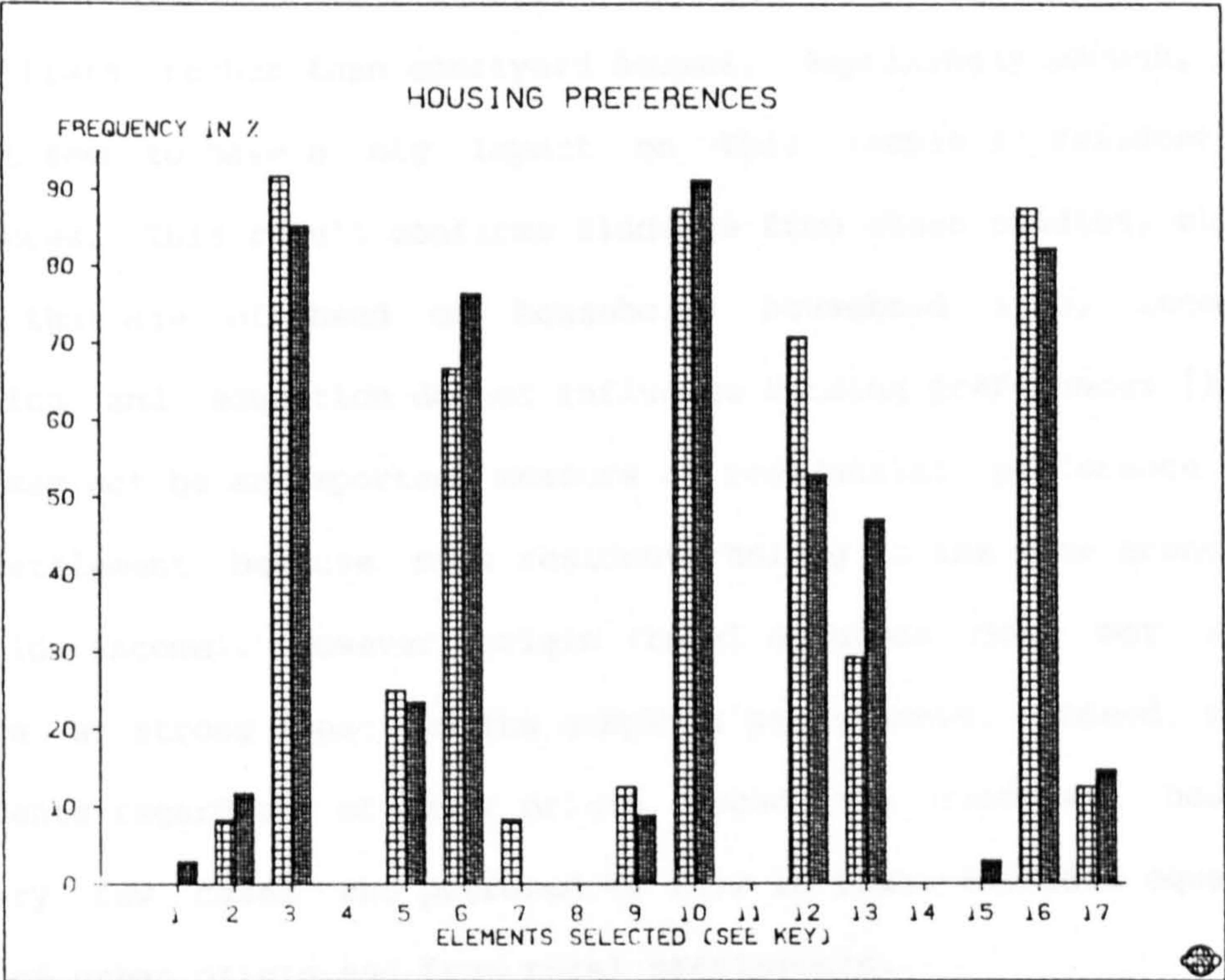
"how can you invest in a house which is hanging in the sky?

How can you say that the house is yours if you don't own its foundations, its roots?"

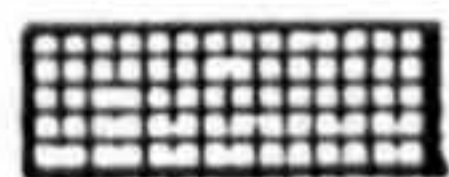
Another person said that she would rather own a piece of land with only a tent on it, than a luxury flat in a high rise building. This would suggest that it is the concept of ownership and the values and beliefs attached to it, that made the majority of the respondents choose the courtyard house and not its typology; and that the answers would have been different if the dwellings were presented as to be rented, and that a special grant was made available to improve them. Presented with this alternative, most of the respondent still preferred the courtyard houses, and said that:

"a courtyard is the heart of the dwelling and without it a house would be like a grave."

Graph(6.6): Housing preferences



RESPONDENTS IN
OLD HOUSING AREA



RESPONDENTS IN
NEW HOUSING AREA

- 1-High rise flat
- 2-Other flat
- 3-Courtyard house
- 5-Pedestrian street
- 6-Street accessible to cars
- 7-Private garage
- 9-No terrace
- 10-Terrace
- 12-No screens
- 13-Screens
- 15-No guest room
- 16-One guest room
- 17-Two guest rooms (male and female)

Furthermore, It was thought that younger heads of household would prefer flats rather than courtyard houses. Suprisingly enough, age does not seem to have a big impact on this sample's residential preferences. This result confirms findings from other studies, which suggest that age of head of household, household size, income, occupation and education do not influence housing preferences [10]. Income may not be an important measure of residential preference in this settlement because most residents belong to the same economic class (low income). However, origin (rural or urban) does not seem to have a strong impact on the sample's preferences. Indeed, most respondents regardless of their origin chose the courtyard house. The very few cases who preferred to live in flats included equally people of urban origin and from rural settlements.

Furthermore, when asked why they thought a courtyard was an important feature of the dwelling, 26 per cent of respondents said that they were born and brought up in a courtyard house, and that they got used to live in this kind of dwelling and that it was 'Algerian' .

A woman said :

"it (the traditional settlement) links me to my childhood and makes me feel the continuity of life."

Thus, previous experiences of housing have an important impact on the respondents' preferences. Many relocated dwellers (people who have been moved from the Quartier des Anciens Moudjahidines to Sidi-Abbaz) expressed grief over the loss of some features of the traditional

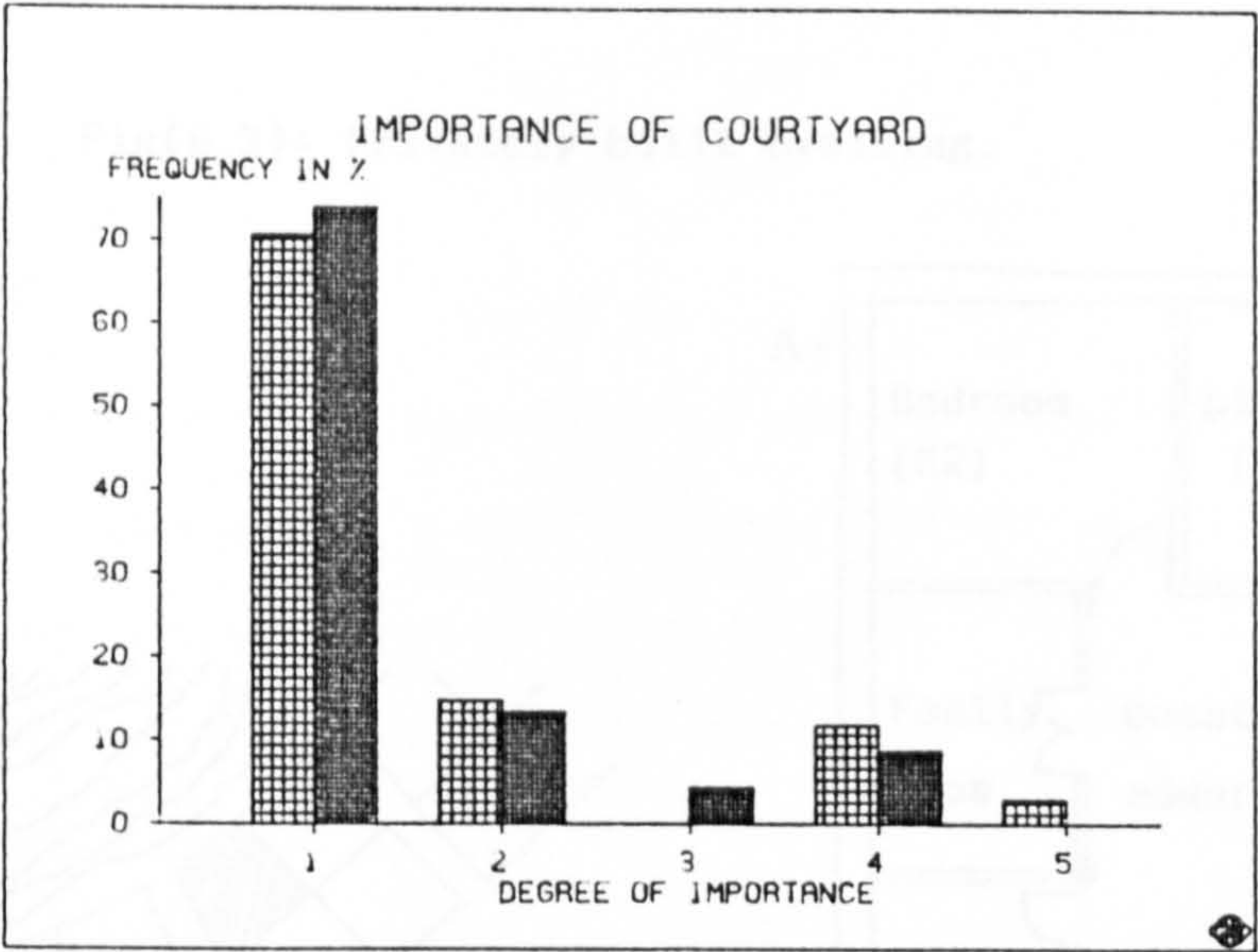
settlements. One housewife commented :

"At first when we moved here it was very exciting, the flat was new, well lit, equiped with so many facilities; but after a while I started to feel that something was missing, the courtyard. You see we have a backyard, but it is different, a courtyard as its name indicates is the middle of a house, its focal point".

Graph (6.7) summarizes the respondents' evaluation and compares the intensity of use of the courtyard and yard.

The strong and almost unanimous preference for the courtyard house type is not specific to these particular subgroups of respondents. Examining the different 'permis de construire' or planning applications submitted during the first six months of 1986, by private clients, it emerged that 'all' applicants included a courtyard (and sometimes even two) in their dwellings (fig 6.3). There is, however, some danger in accepting this opinion at face value, and deducing that all Algerians prefer the courtyard house. A trip around any of Algiers suburbs will reveal a great variety of sumptuous independent villas, the complete antithesis of the courtyard house.

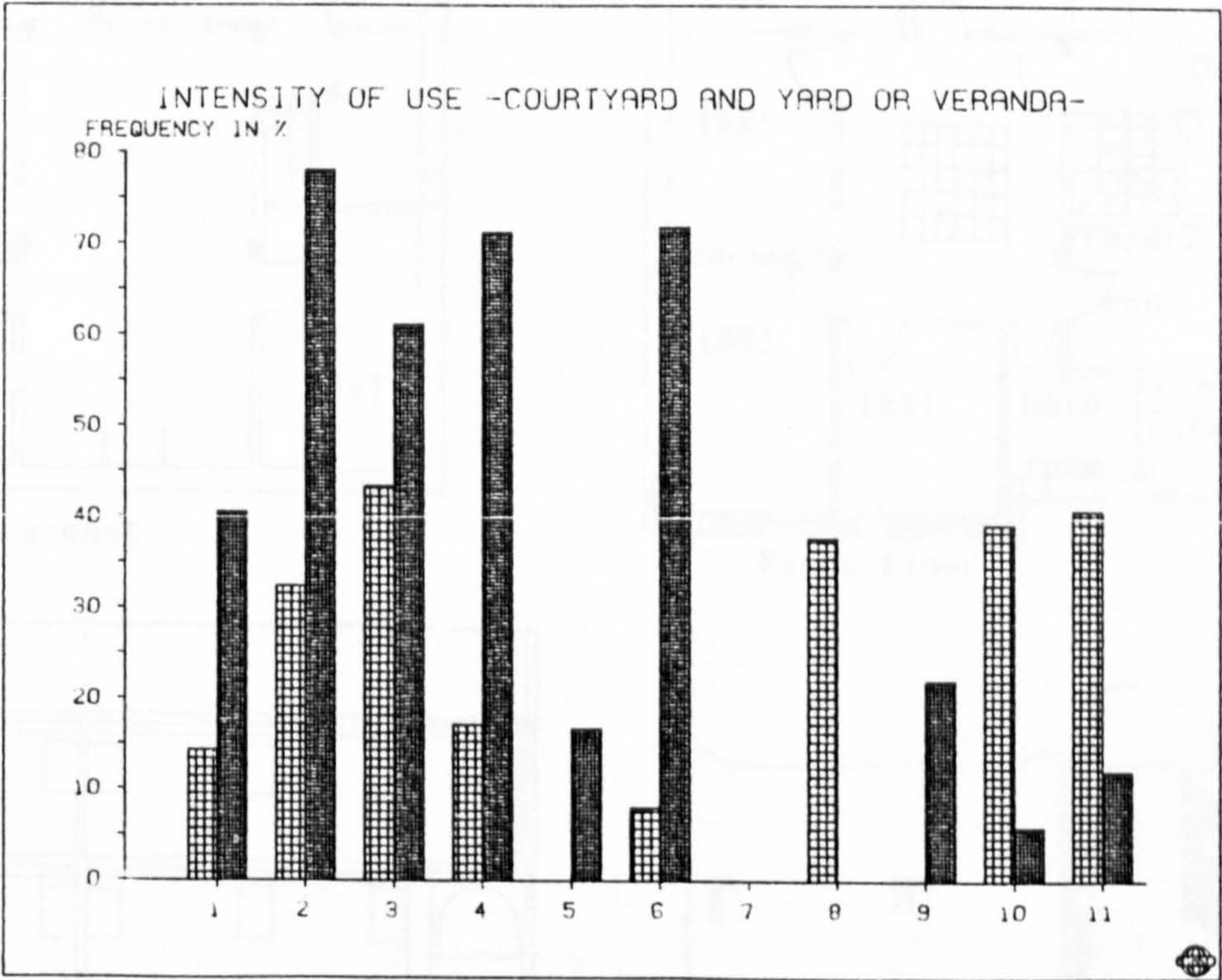
Graph(6.7): Evaluation and use of the courtyard



1-Very important
2-Important
3-Fairly important
4-Does not matter
5-Do not know

RESPONDENTS IN OLD HOUSING AREA

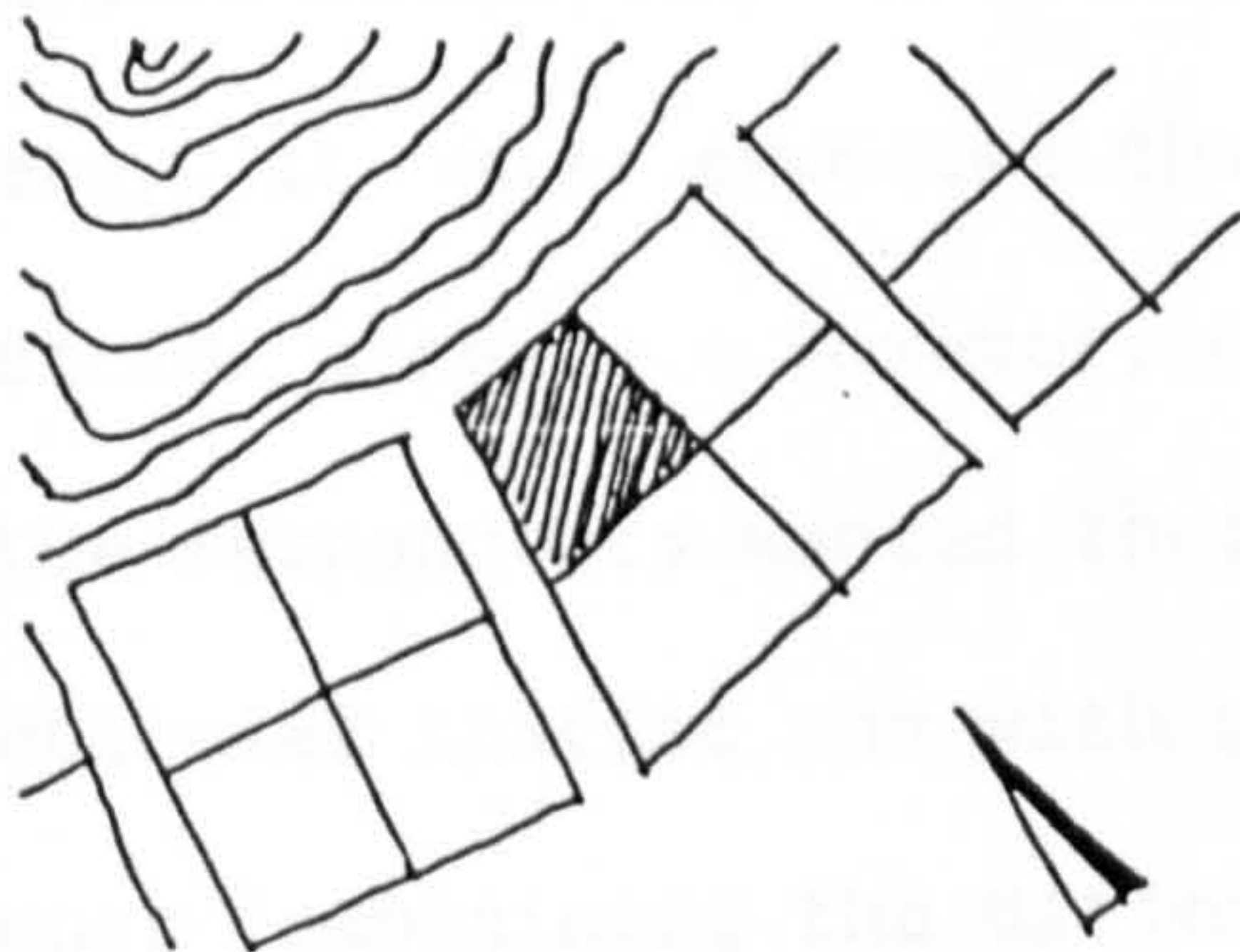
RESPONDENTS IN NEW HOUSING AREA



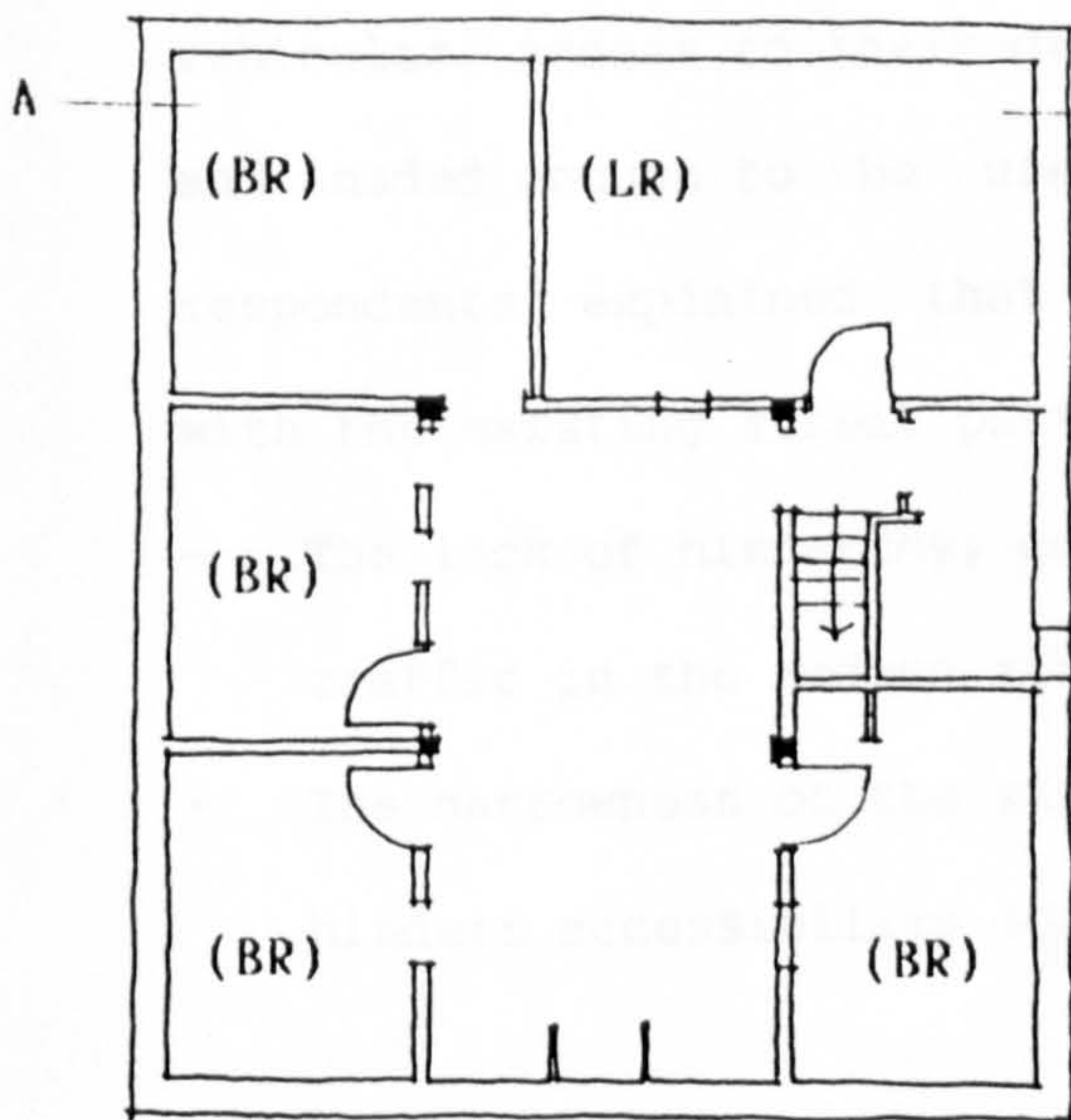
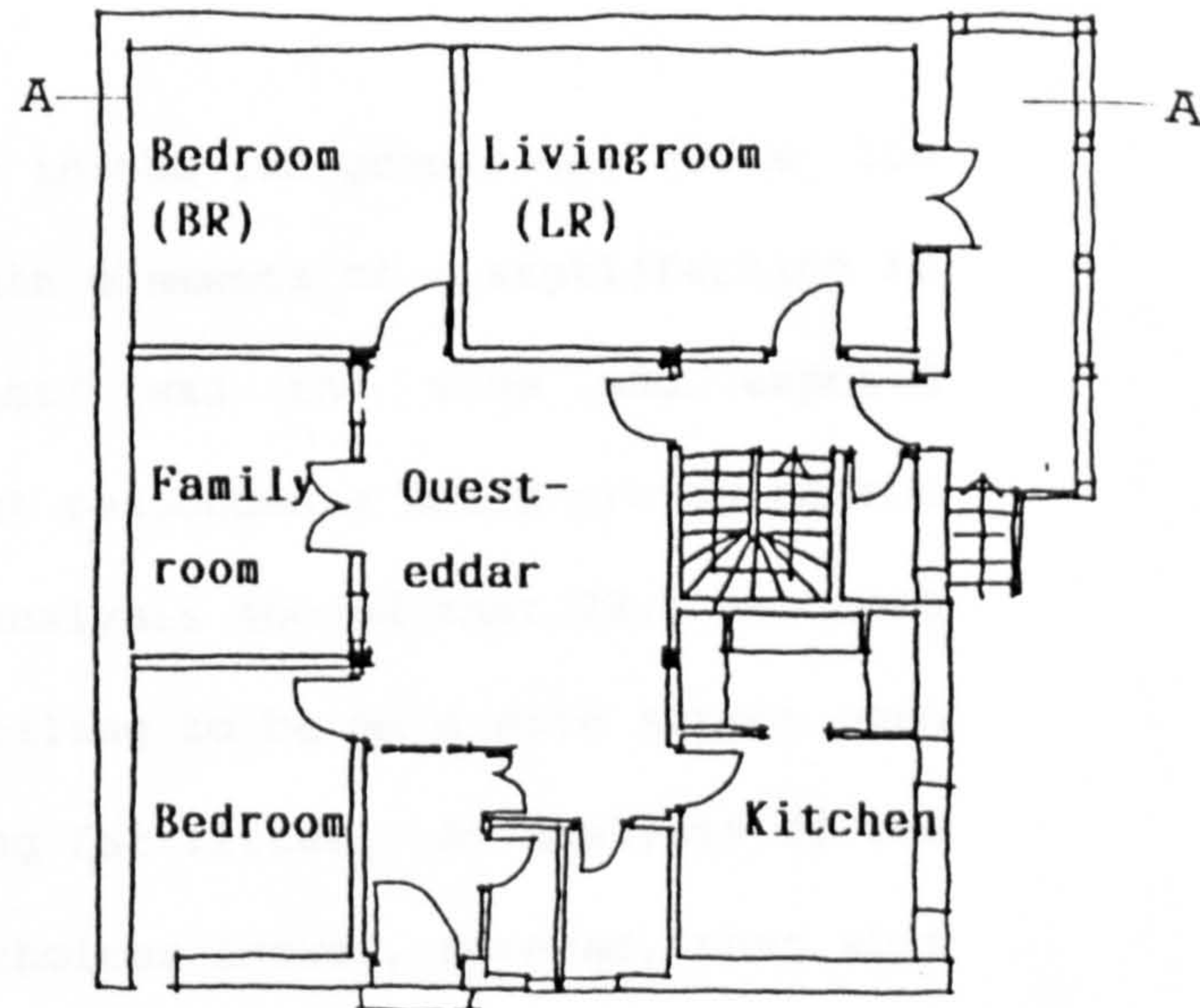
1-Preparing meals
2-Having meals
3-Washing
4-Relaxing
5-Receiving male guests

6-Receiving female guest
7-Playing (children)
8-Sleeping parents (summer)
9-Sleeping parents (winter)
10-Sleeping children (summer)
11-Sleeping children (winter)

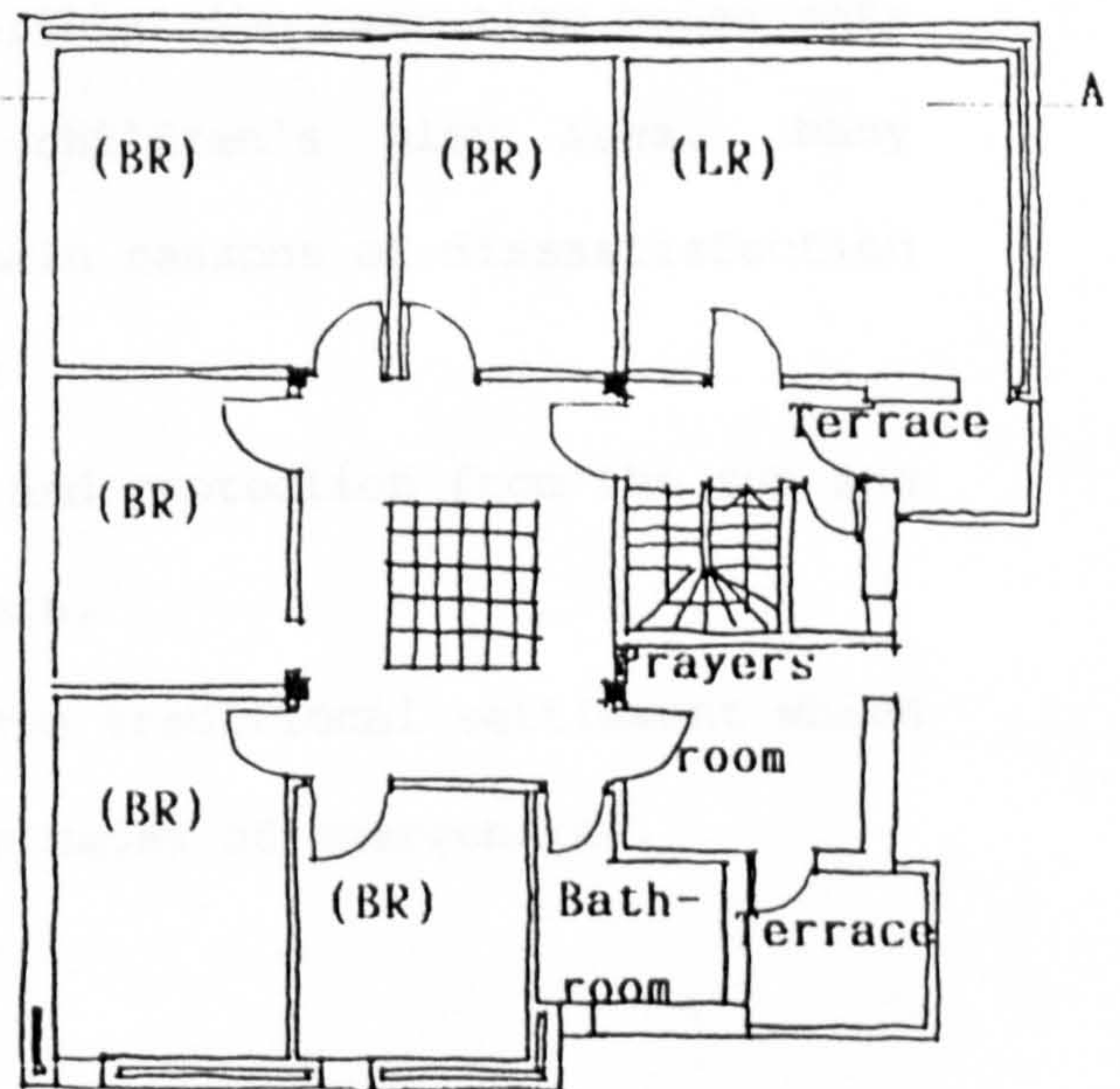
Fig(6.3): Privately built dwelling.



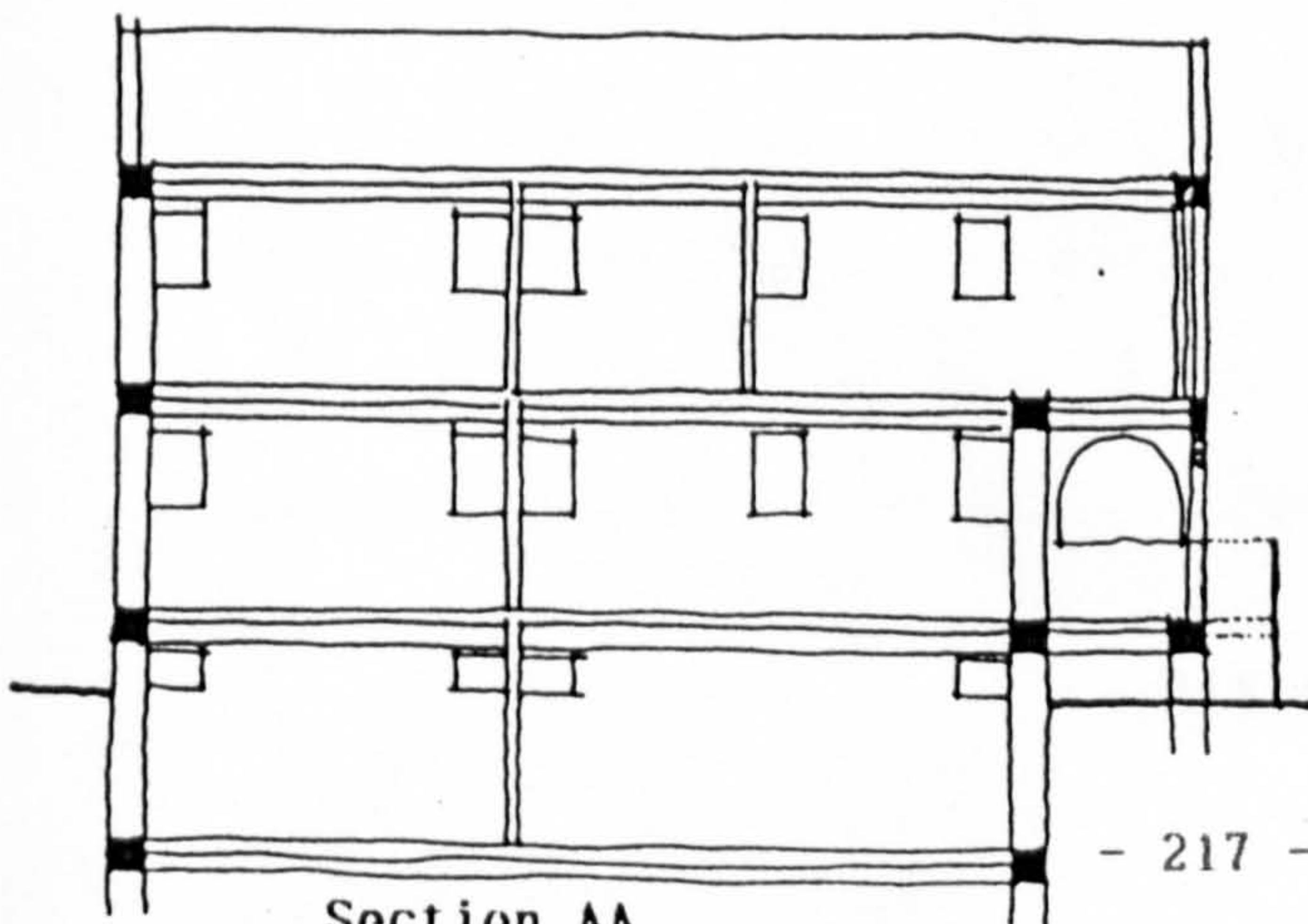
Scale: 1/200



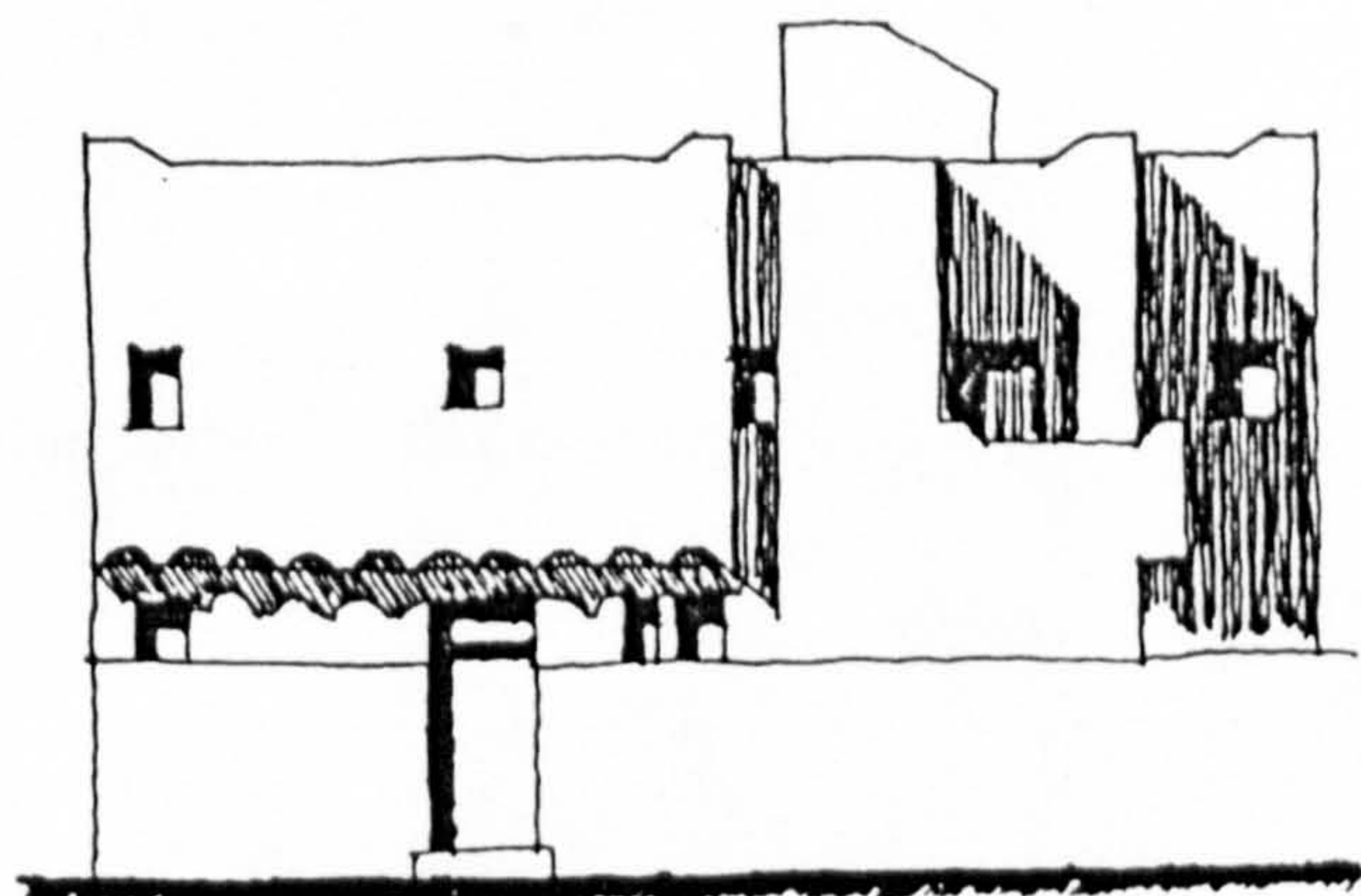
Basement



First floor



Section AA



6.4.2 Type of streets

Given the fact that car ownership in the two groups was quite low (21 per cent) and that one of the main elements of dissatisfaction in the modern settlement of 'Sidi-Abbaz' was the wide and exposed streets, it was expected that most respondents would prefer narrow pedestrian streets. However, data analysis showed that 72.4 per cent of the respondents wanted their dwelling to be on a wide street open to vehicular traffic and with parking facilities. An analysis of the comments explaining the different choices showed, however, that what respondents seemed to want is a type of street which would allow easy vehicular access to their dwelling while at the same time being safe and shaded enough to be used as a children's play area. Many respondents explained that their main reasons of dissatisfaction with the existing street pattern were:

- The lack of hierarchy, coherence, and protection from the sun and traffic in the modern street pattern.
- The narrowness of the streets in the traditional settlement which hinders accessibility specially in cases of emergencies.

6.4.3 Terraces

The terrace or flat roof is an important feature of North African houses in general. In the M'zab many people (94.1 per cent of parents and 91.1 per cent of children) sleep on the terrace during the summer (table A4.1 in appendix IV). During the 'trade-offs' game it was interesting to note that no one hesitated to spend 10.000DA which was twice the amount they would have to pay for an extra room to have a terrace. Exactly 89.7 per cent opted for the terrace without a single hesitation (graph 6.5). It is also interesting to note that even when the courtyard is eliminated and replaced by a front garden such as in the case of the villa type dwelling so cherished in the Northern part of Algeria, the terrace is still kept. The terrace is not only valued because of its intensive use, specially during the summer, but because many people think that having a terrace makes future vertical extension easier.

6.4.4 Mashrabyah or screens for the windows

Going through the simulation game sheets, one can see that the section dealing with the 'mashrabyah' is particularly full of pen marks and crosses, a reminder of the hesitations some people had in making their final decisions. Indeed, at this level of the game, most people had only 5000DA left with alternatives to choose from. The 5000DA could be used either to have a 'mashrabyah' which will guarantee visual privacy while still having the possibility of seeing

without being seen, or to have a male guest-room and enjoy extra space and a better privacy inside the house.

Long moments of arguments and hesitation showed that privacy was still a very controversial concept, specially among the respondents of the traditional settlement; 47.1 per cent preferred to have the 'mashrabyah' against 29.2 per cent in the new settlement (Graph 6.6). This could be explained by the fact that 'seclusion' from the outside world and privacy in general is not as much valued by the dwellers of Sidi-Abbaz as those in the Quartier des Anciens Moudjahidines. However, this is not quite true as 45 per cent of these same respondents complained about the lack of privacy in their present dwelling (graph 6.2). A more detailed look at the data shows that most people, who think that having screens for the windows is not very important, live in the upper flats. On the other hand, field observations show that most ground floor flats have some kind of screening system.

It could be argued that the screening on the ground floor flats is more a protection against burglars than visual intrusion. It can not be denied that security and safety account for a certain percentage, but a comparison of different kinds of screens shows that most of the ground floor windows are screened more because of privacy (fig 6.4).

Fig(6.4):Screens to the windows as a mean to increase visual privacy.



Screens are usually added to the ground floor flats windows. The type of screens used shows that the concern is more about privacy than anything else.



6.4.5 Guest rooms

One of the ninety nine names of Allah frequently invoked by members of the Islamic society is 'Al-akram', meaning the most generous of all. Thus, religion encourages believers to be hospitable [11]. This 'karam' or hospitality encourages strong social bonds in Algeria and in most Islamic cultures. A very popular maxim says 'if a guest does not enter a house, then the angels won't enter it either'. Thus, the house is not blessed because its members are deficient in their provision of hospitality. However, this hospitality was not allowed to conflict with privacy in the home (especially that of women). These norms (hospitality and privacy) have affected some of the dwelling design. The major features reflecting such norms are the main entrance and the guest-living room for males (see figure 2.4 and 4.6).

Graph(6.6) shows that 84.5 per cent of the respondents opted for the male guest-room. And even the households, where women's privacy was less important, still preferred to have a special room for male visitors. From the comments gathered during the game, it became clear that a special room was so strongly needed because of the frequency and informality of the visits pattern. Indeed, it is quite common for a husband to come back from work with a group of friends he just met and whom he invited for coffee or dinner. Being prepared to receive people at any time and offer them the best catering is one of the most praised values in the Algerian society. Having a special

room often makes things much easier.

6.4.6 location

The housing solution goes beyond merely finding a dwelling that satisfies family needs and preferences. People are also concerned about the neighbourhood in which they live. Research on urban residential location [12] suggests that there are two main residential location choices within an urban setting: residents may choose to live closer to the city centre or farther out. Consideration of accessibility to jobs and certain urban facilities, may attract people to central city areas. On the other hand, the desire for spacious housing, and concern with social status and the physical characteristics of the residential environment may pull households towards farther outlying locations.

Several studies indicate that the majority of people would like to live farther away from the city centres. The major reasons for this desire are getting away from noise, traffic and crowding [13]. Furthermore, accessibility to services, facilities, and workplace was found to have an insignificant impact on residential location [14]. This does not seem to be the case for the respondents of this research, as most people would preferred to live near the city centre, as this enables them to be near shops, government offices, community facilities, workplaces, friends and relatives and within easy access to most parts of the city in general. This could be explained by the

non-availability of services in most newly built areas in the outskirts and the inadequacy of the transportation system.

6.5 CONCLUSIONS

Satisfaction with the built environment is related to physical as well as non physical features. In this study, the physical features related to residents' satisfaction include: spaciousness, location, accessibility and availability of services and amenities. 'Spaciousness' was not only interpreted with respect to the amount of space inside the dwelling, but also with respect to the degree of privacy from neighbouring units. As far as the non-physical factors are concerned, privacy, maintenance, and satisfaction with other residents appear to be among the strongest predictors of overall satisfaction. 'Privacy' was considered especially with respect to visual intrusions, and overlooking. 'Satisfaction with other residents' was usually associated with friendliness and trustworthiness of neighbours, the degree to which they cared for the upkeep and cleanliness of the development, and the respect for one another is privacy.

The results also indicate that past residential experience, expectations and length of residence have an important bearing on satisfaction. Rehoused people are, initially, often pleased with the improved facilities, but after a certain time, disillusionment often creeps in. Dilapidation and lack of adequate servicing (especially

lack of a good sewage system), were the main cause of dissatisfaction with the traditional settlement. The new taste for modern furniture (acquired usually for its prestigious value rather than utility), mass media, and international exposure led to a conflict between acculturative and traditional housing attitudes. The multi-functionality of the traditional space is no longer appreciated nor desired. On the contrary a strong preference for more functionally specific rooms appeared. However, although many of the courtyard's functions have been shifted to other rooms, the courtyard is still wanted and preponderant in most people's conceptions and images of the ideal house. This study's findings clearly suggest that the courtyard house type or more exactly a 'modernised version' of it is not only unanimously preferred by the residents' of the two sample areas, but also by a large cross-section of the population of the M'Zab regardless of socio-economic status. Results also indicate that flat roofs or terraces are highly valued. The strong preference for a 'male guest room' and for screened windows shows that privacy is still highly deferred to by a large proportion of the respondents although there are some signs of a more relaxed attitudes towards sex-segregation among the younger generation. The narrow traditional streets are seen as inadequate for today's age of the motor car. Many respondents expressed their preferences for wider, but well protected streets which would accommodate both cars and children's play.

6.6 NOTES AND REFERENCES

1.
Michelson, W. "Man and his urban environment: a sociological approach." Reading, Mass.: Addison-Wesley, 1970.
Michelson, W. "Environmental choice, human behaviour, and residential satisfaction." Oxford University Press. New York, 1977.
2. Francescato, G., Weidemann, S., Anderson, J., and Chenoweth, R. "Predictors of residents' satisfaction in high rise and low rise housing." JAR 4/3, December 1975. pp.5-9.
3. Lammeri, M. "Privacy and built form." Unpublished M.Phil thesis, Nottingham University, 1987.
4. Ibid.
5. Campbell, A., Converse, P., and Rodgers, W. "The quality of American life." New York: Russell Sage Foundation, 1976.
Michelson, W. 1977. op.cit.
6. Francescato, G., Weidemann, S., and Anderson, J. 1975. op.cit.
7. The following verse is quoted from "The meaning of the Glorious Koran", an explanatory translation by Mohammed Marmaduke Pickthall. 4:36.
"And save Allah. Ascribe no thing as partner unto Him. [show] kindness unto parents, and unto near kindred, and orphans, and the needy, and unto the neighbour who is of kin [unto you] and the neighbour who is not of kin, and the fellow-traveller and the wayfarer and [the slaves] whom your right hands possess. Lo Allah loveth not such as are proud and boastful."
And a saying of the Prophet Mohamed (Hadith):
"The angel Gabriel kept exhorting me about the neighbour to the point that I thought he would grant him the right of inheritance."
Extracted from El.Bukhary "Sahih at Boukhari." Kitab at She'ab. Cairo, (n.d.).
8. Michelson, W. 1977, op.cit.
9. Ibid.
10. Ibid.
11. The following saying by the Prophet Mohamed, encourages the

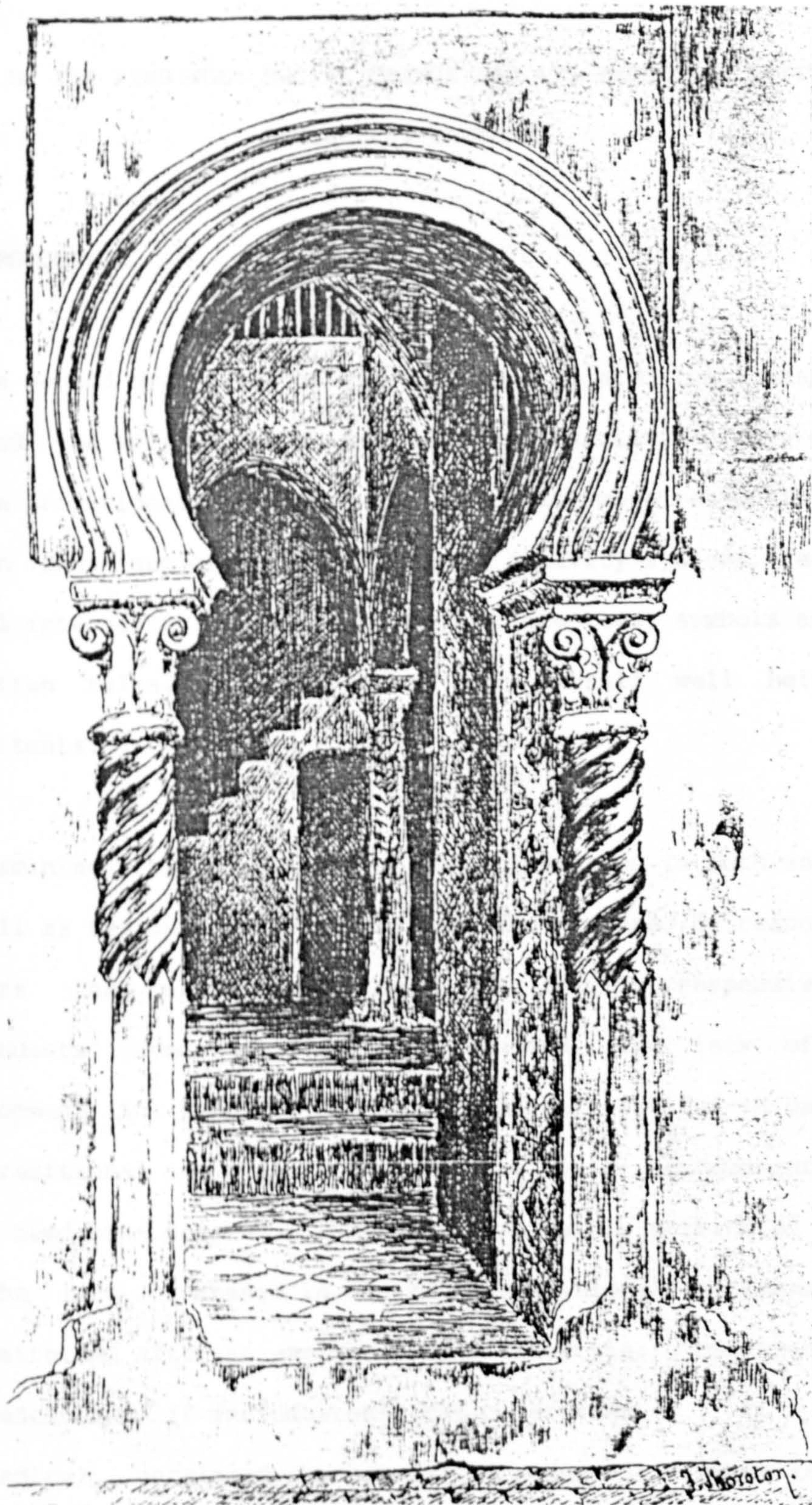
Muslims to be hospitable:

'He who believes in God and the Day of Judgement should not hurt his neighbour, and he who believes in god and Day of Judgement should be hospitable to his guest, and he who believes in God and the Day of Judgement should speak goodness or else not say anything.'

See also: Al-Shahi,A. "Welcome, my house is yours: values related to the Arab house." In Hyland,A., and Al-Shahi,A. "The Arab house." Proceedings of the Colloquium held in the University of Newcastle upon Tyne, 15/16 March 1984. CARDO, 1986.pp.25-31.

12. Michelson,W. "An empirical analysis of urban environmental preference." The American Institute of Planners, Journal 32, 1966. pp.355-360.
13. Ermuth,F. "Residential satisfaction and urban environmental preferences." Geographical Monograph no.3. Toronto: York University, 1974.
14. Lansing,J. "Residential location and urban mobility: the second wave of interviews." Ann Arbor, Mich.: Survey Research Center, Institute for Social Research, University of Michigan, 1966.

CHAPTER SEVEN



ALGIERS : MOORISH DOORWAY, RUE PORTE NEUVE

CHAPTER SEVEN

SUMMARY OF THE FINDINGS: SOCIAL CHANGE AND ITS IMPACT ON ATTITUDES TO SETTLEMENT PATTERNS

7.1 INTRODUCTION

The second hypothesis of this study postulated that mass housing ignored the socio-cultural needs of the Algerian society, suggesting that a traditional settlement was culturally more responsive than a modern one, supporting the different activity systems, facilitating social interaction by providing appropriate cues, symbols and shared unwritten rules, and increasing the overall well being of its inhabitants.

Examining the general level of satisfaction in both settlements, as well as the dwelling type and location preferred by respondents, it appears that neither settlement is totally responsive to the respondents' needs and desires. Indeed, the lack of suitable development in response to social change, resulted in gaps between the traditional and modern urban forms, and contemporary spatial uses, needs and desires. Such gaps were mainly attributed to :

- The lack of change in the adobe traditional settlement which is patterned after an earlier simple lifestyle. Designed for the pedestrian, it includes only basic services.
- Radical, unrelated changes in the modern settlement in which the

plans and designs were mostly based upon alien social and climatic environments.

What most people would prefer is a modernised traditional settlement. This 'mixed' type is seen as one that is not only socially but climatically designed to provide the continuity of the past while permitting the changes of the future. Indeed, what this study reveals is that modernity has affected many aspects of the respondents lifestyle, thus establishing the validity of the third hypothesis:

"Cross cultural influences which are usually transmitted by conquest, trade, and/or mass-media, lead to changes of values and affect attitudes to settlement patterns and built form."

7.2 THE PROCESS OF CHANGE

History has shown that societies are dynamic by nature, and that change is a natural phenomenon in the evolution of a culture [1]. However, if most cultures experience change, there are different types of change. Changes may be internal and originate from within a culture itself such as changing demographic, sociological, technological aspects within the indigenous culture. They can be imported by contact with other cultures either by trade, travel, migration or the like. Finally changes may be imposed from without, such as in case of war, colonisation and invasion.

Like many other societies, the Mozabite and the Algerian society in general, witnessed many demographic, economic and other internal changes necessary to the evolution, or at least to the 'survival' of a culture. Until the nineteenth century, this process was evolutionary and inherent to the indigenous culture itself which in a way created a certain continuity. This latter was increasingly disrupted when the area started to experience the two last types of change. However, Nomad attacks, Turkish colonisation and other clans' or tribes' disputes did not produce major discontinuities in the M'zab. These came later, after its annexion to France and its invasion by the French settlers, and as a result of internal and external socio-economic changes.

In marked contrast to societies where population growth, industrialisation and urbanisation have long passed their peak, and in contrast to previous eras of social change in general, change in Algeria and most other developing countries was neither slow nor gradual [2]. Many members of today's society particularly those from rural origin found themselves changing from a rural economy and lifestyle to an urban and industrial one in the course of a single generation. Furthermore the means with which this rapid change was achieved were imported and sometimes even imposed such as in the case of colonisation. It is not surprising then, that these changes are usually accompanied with conflicts.

In the M'Zab and in Algeria in general, this conflict is manifested at the societal level in a deep rift between the modernists and the traditionalists. Increasingly, such a rift exists as well at the individual level. Many people feel two forces: one pulling them to the modern ways and lifestyle and the other pulling them towards the local traditions. Daily life in Algeria is full of occasions for experiencing the conflicts of duality and the resulting contrasting environments. For example, the dichotomy of urban landscapes is evident in most settlements. Such combinations and juxtapositions exist in various degrees - as a few isolated modern buildings in the middle of traditional settlements, or as a whole portion of a settlement - as in the case of the 'ZHUN' (Zone d' Habitation Urbaine Nouvelles) or suburbs of almost every settlement in Algeria.

The effects of modernisation are not only restricted to settlement patterns. They are very strongly felt in changes of the state of the economy, change in the social fabric of society, social interaction, family structure, and changes in the social status of women. In the M'Zab and in Algeria in general, most of these changes date from the French colonisation.

7.3 COLONISATION AS A POWERFUL INSTRUMENT OF CHANGE

Tracing the historical background of the M 'Zab, section (4.5) showed that because of the location, site and harsh conditions of the valley, the Mozabites managed to keep away many potential interlopers. It was only after 1882, when it was occupied by the French that the M' Zab started to experience the watershed of change. Ghardaia became a French military base and gradually the effects of an alien culture took shape in a variety of military camps, administrative structures, hospitals and religious missions and schools.

The imposition of a new administrative system and the designation by the French of a 'Caid' or governor was to create the first major change in the Mozabite society. Not only did it strongly undermine the power and influence of the 'Mokkadem(s)' (see graph 4.2) and therefore weakened the traditional social and political structure and solidarity, but it also created frictions between the different groups of 'Achira(s)' or extended families.

With the increase of the European population, new quarters were needed. The French new legislation expropriated many Mozabites, and took over the 'Waqf' or 'habous' land (see section 2.3.2.3). Later on this was followed by new laws (Warnier Law) encouraging the individualisation and commercialisation of land. These policies severely affected the traditional land ownership system and led to

the fragmentation of the extended family property. The first French quarters were developed outside the city walls of 'Ghardaia-Ksar' and consisted of rich villas surrounded by gardens. They later developed along the main road joining Ghardaia and Beni-Isguen, creating the main boulevard of the area (plate 4.2). Many small hotels were built and tourism became the main resource of the French settlers. This opened up the traditionally and deliberately self-contained and close-knit community to the outside World. Furthermore, as in many societies undergoing economic change, many Mozabites had to emigrate to France in search for better wages to sustain the old family structure, and maintain a higher living standard. This change in the 'international exposure', plus the interaction of the indigenous population with the French settlers affected the traditional lifestyle, and new patterns of consumption, tastes and aspirations emerged.

7.4 ECONOMIC DEVELOPMENT AND TECHNOLOGICAL CHANGE

By tradition the M'Zab has had its economical vocation in the primary and tertiary sectors. The maintenance of the palmgrove was vital for the survival of the population (it created a micro-climate helping the growth of other agricultural products and ameliorated the harsh climatic conditions), and the commercial activity traditionally exercised by the Mozabites were the main reasons for such predominance.

However, the discovery of oil and gas in two neighbouring settlements (Hassi-Messaoud and Hassi-Rmel), and the industrialisation of the Sahara in the 1970's caused a considerable growth and change in the economic activity of the region. A large number of workers from the Northern part of Algeria, foreign companies and experts were drawn into the area transforming Ghardaia into a large transit centre. This sudden economic prosperity, the introduction of technology, the improvement of services, transportation and communication systems all led to a vast structural change in the environment. Naturally, the physical environment had to be very quickly transformed to accommodate the motor car. Access and service facilities such as private parking lots, gas stations and an adequate network of roads and highways were developed. Other social aspects were influenced by this sudden economic change. These included the individual's status in relation to the family and society, changes in the social status of women, changes in attitudes of men, and changes in the family's structure and organisation.

7.5 CHANGE IN SOCIAL INTERACTION AND FAMILY STRUCTURE

Individualized wage economy and the emergence of many incomes within the extended family has given to each individual a certain economic independence and even a new status which undermined the authority of the patriarch. Very often this latter has had to accept to share the decisions related to the homestead which, at one time used to be his sole right. In some cases power was even transferred

to the member of the family who earned the most. The discovery of the money economy also strongly undermined the former kinship system which used to be based on extended solidarities. By giving the individuals or nuclear families a separate income it provided a certain autonomy, and led to the emergence of individualistic attitudes and to conflicts between these latter and the former community orientated values.

Mutual aid has also fallen victim of this reordering of societal and economical attributes. It is no longer part of communal interaction as it was when scarcity of basic societal prerequisites in material, goods, and services made it one of the the main survival aids in the community. Today, however, most people are materially much more affluent than in the past. The market provides an enormous range of subsidised commodities and services, which most can afford. As a consequence of this material self-sufficiency, people felt more independent and have, therefore, been able to weaken and reduce their once vital social contacts with no detrimental effects.

In a like manner, the introduction of modern services and modes of communication along with other aspects of modernisation have influenced very strongly the social fabric of Algerian life. The widespread access to different audio-visual equipments such as television sets and radios, as well as the proliferation of foreign newspapers and magazines all affected and reduced the time previously devoted solely to interacting with family and society members.

Furthermore, American soap operas such as 'Dallas' and other foreign soap operas have become the main entertainments of the housebound Algerian woman. This influx of foreign values and lifestyles has greatly influenced the Algerian's women and men conceptions of the 'ideal' family.

The number of nuclear families has increased very sharply. Furthermore, education (especially that of the women) and the development of family planning centres where contraceptive devices are provided free of charge led to a reduction of family size. The concept of marriage itself has been changing. Before, marriage was viewed as an important requirement in establishing one's social status. In addition it was seen almost as a religious requirement. The marrying age was 16 to 18 years; today, the current average age at which people marry is approximately 25 years or above. Most girls prefer to go to college or acquire technical skills to secure their future before getting married.

7.6 CHANGE IN THE WOMAN'S SOCIAL STATUS

Privacy has always been connected to, or centered around, the respect for the woman's privacy.

Today, women's social status has changed. However, varying degrees of social restrictions placed upon women still exist in some communities. In the eyes of the average Mozabite for example,

society remains sexually segregated. And social taboos still prevent a respectable woman in any part of Algeria from stopping at a cafe. However, the growing visibility of amorous young couples in secluded areas of Algiers' and other big cities' parks and cinemas hints at the loosening of a traditionally strict moral code. Furthermore, the growing number of women entering the workforce every year testifies to social support for women's right to participate in economic activities. Women's influence on family affairs and decision making has increased, so has their role in the society as a whole. This may be due in part to their new educational status. Women now compete educationally at all levels, including the university, both at home and abroad. On the other hand, with the increasing involvement in the socio-economic and political affairs, women are increasingly exposed to the rest of society and put in positions in which they must communicate directly with men.

All these factors have had a strong impact upon the perception of the woman and her changing role from a passive participant to a more active one, notably in activities outside the house. The new perceptions have in turn affected the concept of privacy and values attached to it. However, this does not mean that privacy is no more deferred to. It is still quite an important social norm in some families and it should be incorporated in the settlement form to regulate access between dwellings.

7.7 CHANGES IN MEN'S ATTITUDES

Industrialisation and the spread of individualized wage economy had very strong impact on family and social structure. Discovering better job opportunities elsewhere, large numbers of young men have been willing to move away from the security of the family and community towards the economic security of the better job, denoting a change in men's attitudes towards kinship ties.

The liberation war where women played an important role either by joining the 'FLN' (see appendix I), or by sustaining the family when the men were at the front, influenced quite strongly men's attitudes towards women. After independence, the widespread education, the large number of female teachers (they sometimes outnumber male teachers, especially at the primary and secondary school levels) and female participation in the workforce in general, influenced even more men's attitude towards sexual segregation. Furthermore, large numbers of women are increasingly contributing to their family's income which has increased the interdependence of conjugal partners. Nowadays, husband and wife share responsibilities, go out together, and the boundaries demarcating the division of sexes are becoming more flexible. However, these changes have not radically altered people's attitudes towards women and kinship obligations. The dwelling for example, still has to make allowance for the separation of the sexes and for duties towards relatives.

However, the dwelling, which in the past was perceived as the women's quarters or territory and used by men only as a sleeping place, is now intensively used by large numbers of men. In effect, because of the increase in leisure time, the availability of papers and magazines and other entertainment gadgets, many men are spending more time at home.

7.8 CHANGE IN HOUSEHOLD DOMESTIC TECHNOLOGY: ITS IMPACT ON THE FLEXIBILITY OF THE TRADITIONAL SPACE

The introduction of Western style furniture and new household domestic technology has caused specialised room usage and created the need for more regularly shaped and bigger rooms. Yet the arrangement of this modern furniture remains highly traditional, that is lined up against the walls. This pattern which may be an extension of the traditional design of 'niches' and built-in furniture maximises the free space within a room, and especially keeping the floor clear.

This function specialisation of rooms has caused some of the functional uses of the courtyard to shift to alternative spaces such as kitchens and bathrooms. However, the courtyard is still highly valued. The study of the different activity patterns and behaviours inside the dwelling has shown that some of them can only be carried out in a courtyard (e.g, couscous preparation, washing of wool and other heavy items). Moreover, some national surveys have shown that the elimination of the courtyard is increasingly forcing high-rise

flats dwellers to abandon certain rituals such as sheep's sacrifice during 'Aid-el-adha'.

In this study, the overwhelming majority of the respondents, regardless of age, income or any other factor, have indicated their preferences for the modernised single family courtyard housing type. (modernised meaning the inclusion of new amenities such as baths, fitted kitchens etc.). However, the yard in its contemporary format, by being next to the main structure of the dwelling and not its focal point, is not very appreciated. Many respondents complained that not only has it lost its role as a climate regulator [3], but it has also lost its symbolic meaning as the 'heart' of the house, its generator.

The interviews with the building constructors have shown that even in the private sector, the single family courtyard housing type is by far the most asked for. However, if the modern dwelling's spaciousness and its new amenities are praised, there is some evidence that the traditional settlement is better able to meet the child rearing needs of the residents than the modern one. This can be attributed to the opportunities for parental surveillance and supervision, and the higher level of safety and security (mainly from road accidents) available in the traditional settlement. On the contrary, the lack of outdoor facilities for child rearing and for women's activities in the modern settlement has forced a shift of outdoor activities to the inside, increasing the inhabitants isolation.

7.9 THE 'PDU' AS AN INSTRUMENT TO ACCOMMODATE CHANGE

Current Algerian housing policies are aimed at modernising society and are rapidly eradicating the traditional residential form, replacing it with modern design [4]. This is thought to be one way of improving living standards. The 'PDU' or 'Plan Directeur d'Urbanisme' is the tool used for such improvement. However, this study suggests that this mode of plan formulation is inappropriate to the prevailing situation. Indeed, considering the rapid socio-economic change characterising this region, the 15-year period covered by the 'PDU' is too long. Furthermore, the absence of feed back during and after its formulation makes of the 'PDU' a static 'picture' rather than a dynamic and evolving process. The 'DUCH' of the M'zab itself agreed that the 'PDU' of the M'zab is already outdated.

Moreover, the rigid zoning which characterises the M'zab's PDU is completely contrary to the 'organic process of development' that characterised the region. This rigid zoning has led to sharp speculations in land prices and devaluation of the traditional developments which tend to be demolished and replaced by more profitable ones. Hence all actions are focussed on new developments; and even when rehabilitation policies are formulated, they are never implemented. The lack of good sewage systems and the decaying buildings in the 'Ksours' underlines the prevailing poor attention paid to old settlements.

7.10 CONCLUSIONS

The effects of cross-cultural influences on changes in behavioural patterns, attitudes, lifestyles and other artefacts is now well documented [5]. In fact cross-cultural influences are as old as recorded history, however the degree of acculturation varies from one case to the other. In Algeria, for example, the cultural impact of the Ottoman Empire was less than that of France. This was mainly due to the 'assimilationist' French educational policy (see appendix I), which aimed at the creation of 'Francais Musulmans' or French Muslims. French language was taught from the earliest days of schooling and teaching or learning Arabic was forbidden. This imposed change by a power technologically superior led many people reared in one tradition to adopt new norms and sometimes change their values. After independence, the acculturation process was continued by means of cooperation contracts. Large number of French technical workers and teachers came to assist with the development of the country, and in the same manner thousands of unskilled workers migrated to France. Technological development in mass communication and transport broadened even more the contacts, and the international exposure. Change, however, was not always generated by external force. The introduction of wage employment not only brought economic changes but also affected the relationships between different members of family, society and societies themselves. It provide a new status not only to the male but also to the female wage earners. This affected the family structure, size as well as male/female

relationship which in turn influenced people's attitudes towards housing and the built environment in general. This is very evident in the traditionally conservative and close-knit community of the M'Zab. However, because the rate of change has been very rapid (many changes happening within the life span of one generation), this has led to many conceptual conflicts, such as conflicts between inherited cultural norms and new aspirations. The persistence of some traditional norms and the intrusion of new ways and forms in the built environment is another evidence of such conflicts. The effects of cross-cultural influences on changes in behaviour, attitudes, and the built environment in general, led many intellectuals to engage in the search for 'roots' in general and a 'cultural identity' in design. The next part of the study gives more details about the origin and cause of such a movement. And argues that change is a normal phenomenon and that the reproduction of local traditions would not cater for peoples' evolving needs. Instead, the search should be towards new approaches that uncover peoples' evolving needs and incorporate them in the design process.

7.11 NOTES AND REFERENCES

1.
Gugler, J. "Urbanisation and social change in West Africa." Cambridge University Press. London, 1978.
2. Ibid.
3. Dunham, D. "The courtyard house as a temperature regular." In the New Scientist, September 1960. pp.663-666.
Danby, M. "The internal environmental aspects of the traditional Arab house and their relevance to modern housing: In Hyland, A., and Al-Shahi, A. "The Arab house." Proceedings of the colloquium held in the University of Newcastle upon Tyne 15/16 March 1984. CARDO, 1986. pp.83-90.
Noor, M. "An analytical Study of traditional Arab domestic architecture." Ph.D thesis. University of Newcastle upon Tyne, 1979.
Abdin, M. "A bio-climatic approach to house design for semi-desert and hot climates." Ph.D thesis. University of Strathclyde cited by Danby, M., op.cit.
4. Such as the rural housing policies which introduced new environments (Socialist villages) and disturbed the traditional rural settlement pattern.

PART THREE

As a reaction against modernism's break with the past, and the influence of foreign materialism on the Islamic world, and the ensuing change in social interaction, family structure and cultural landscape, many intellectuals have recommended the introduction of traditional materials and design to create and preserve a 'cultural identity'. This part of the study argues that the reproduction of local traditions would mean a complete depreciation of people's evolving needs and aspirations, and that conformity to forceful examples would have the same effects as those brought about by Western models. What is needed is a 'contextual-design-approach' that examines the physical setting and bases any design directly on the evolving needs and requirements of the users.

CHAPTER EIGHT



ALGIERS : DOORWAY IN THE RUE KLEBER

CHAPTER EIGHT

THE QUEST FOR CULTURAL IDENTITY

8.1 INTRODUCTION

The search for roots and the need to define a national cultural identity in Algeria and other developing countries commenced seriously over the past few years but is only now beginning to take on important dimensions.

This dilemma between old and new is another version of the crisis of industrialization which Western European and North American countries had themselves experienced in the nineteenth century [1]. But while these societies had itself invented the Industrial Revolution and had over a century to adapt to the socio-cultural changes that ensued, most of the developing countries found themselves changing from a rural economy to an urban and industrial within the life span of the same generation. Furthermore the means with which this rapid change was achieved were imported and sometimes even imposed (i.e., in the case of colonisation). It is not surprising then, that a kind of 'identity crisis' has emerged. Why it is only now beginning to be treated with increasing self-consciousness is due to a number of reasons: most of the countries concerned with cultural identity experienced colonisation in some form or other. During this process foreign cultural

influences based on advanced technology challenged the indigenous cultures changing not only their technological aspects but also their sociological ones.

After independence, modernism was equated with progress and many newly independent countries engaged in vast and prestigious development and construction projects (i.e., Chandigarh by Le Corbusier in India). Anything traditional was identified with 'backwardness' and 'stagnation'. By the 1960s city centres were growing around the World resembling more modern Paris or London than their local precedents.

Today, it is becoming increasingly obvious that the uncritical adaptation of French or any other European model is no real solution, as these are often inadequate for climate and culture [2]. Fathy's (1973)[3] critique of industrialization and his success in the reassertion of vernacular wisdom to solve low cost housing problems in Egypt contributed a great deal to the questioning by many authorities of the irrelevant and costing aspects of Modernism.

No doubt, this reflects a spirit of increasing self-confidence in some countries of the Third-World, but it is also a part of a wider reaction against Modernism [4], and the banal similarity that universally characterises many cities around the World. Nevertheless, it is in the developing countries, where the effects of Modernism's break with the past have been drastic, that the search

for identity acquired strong emotional and political dimensions. But, can a 'cultural identity' be created? If so, how? Before answering these questions and before reviewing the different approaches that addressed the identity problem in design, some answers to questions such as how could identity be described, should it be national or regional, seem necessary. Furthermore, designers' conceptual systems being usually different from the user's, whose identity should be considered?

8.2 THE QUESTION OF IDENTITY: WHAT IS IDENTITY?

Summarizing an account of the proceedings of a seminar on 'Architecture and Identity', Charles Correa (1983) writes:

"Identity is a process, it is like that snail's trail, the outcome of tackling a series of issues which you perceive as real. It is not an end in itself; it is a byproduct. Secondly, it is pluralistic - which does not mean that you have to accept it all. Pluralism just means that you don't think there is a single answer, that identity has many manifestations. ...the third thing of course is that the patterns we are talking about are dynamic. There is continuous change".[5]

Keywords in that definition are 'process', 'pluralistic' and 'dynamic'. They imply that identity is not a mere product of creativity but an authentic response to particular places. Danby

(1983) agrees that cultural identity cannot be fabricated:

"A capital city with a special identity cannot be created in the same way as a national flag by the assemblage of colours pattern and symbol."[6]

Indeed, even in a uniform nation there might be diversity in the value systems at work. Furthermore, value changes are continuously taking place, and people might want to express their own identity. Therefore, identity is not something which can be created easily but it comes after a very deep understanding of people and their environments, by tackling the real problems and opportunities existing in that environment, and by seeking out basic values and types well suited to the context. Coming up with a specific form as the answer to the problem of identity is a mistake because people's needs as well as aspirations are in constant change. In the same manner, easy imitations of some 'Golden Age' are also prone to failure.

Indeed while it is feasible to preserve and adapt elements from the past to serve the present, to build today exactly as in the past is illogical. The built environment of the past represents a moment in time in terms of tastes and techniques, lifestyles and world-views. To build in an identical manner would be to pretend that all these persisted which is not true. Horror at mass-industrialization may prompt a complete retreat into romantic and nostalgic traditionalism and distort an understanding of the need

for change. Therefore, efforts should be made to evolve a contemporary design that shows the respect for history and tradition that was abandoned during the Modern movement era and yet is capable of fulfilling the demands of late twentieth-century society and reflecting its aspirations.

8.3 DIFFERENT APPROACHES IN ADDRESSING THE PROBLEM OF IDENTITY

As a response to the demand for national identity in the built environment some designers have opted for the use of traditional elements applied to their modern designs. Buddhist domes, arcades, cul-de-sacs, mud and whitewash started to be used even when these were not actually part of the particular regional tradition. In the same manner some of Fathy's (1983)[7] ideas which proved very successful in rural Egypt were appropriated as a sort of 'Instant Islamic Kit' by designers from all parts of the Islamic World without any considerations for the particularities of each country. This could have the same (or worse) effects as those brought about by most foreign models. Furthermore, conformity to forceful examples could prevent the search for solutions more truly suited to the complexities of contemporary societies.

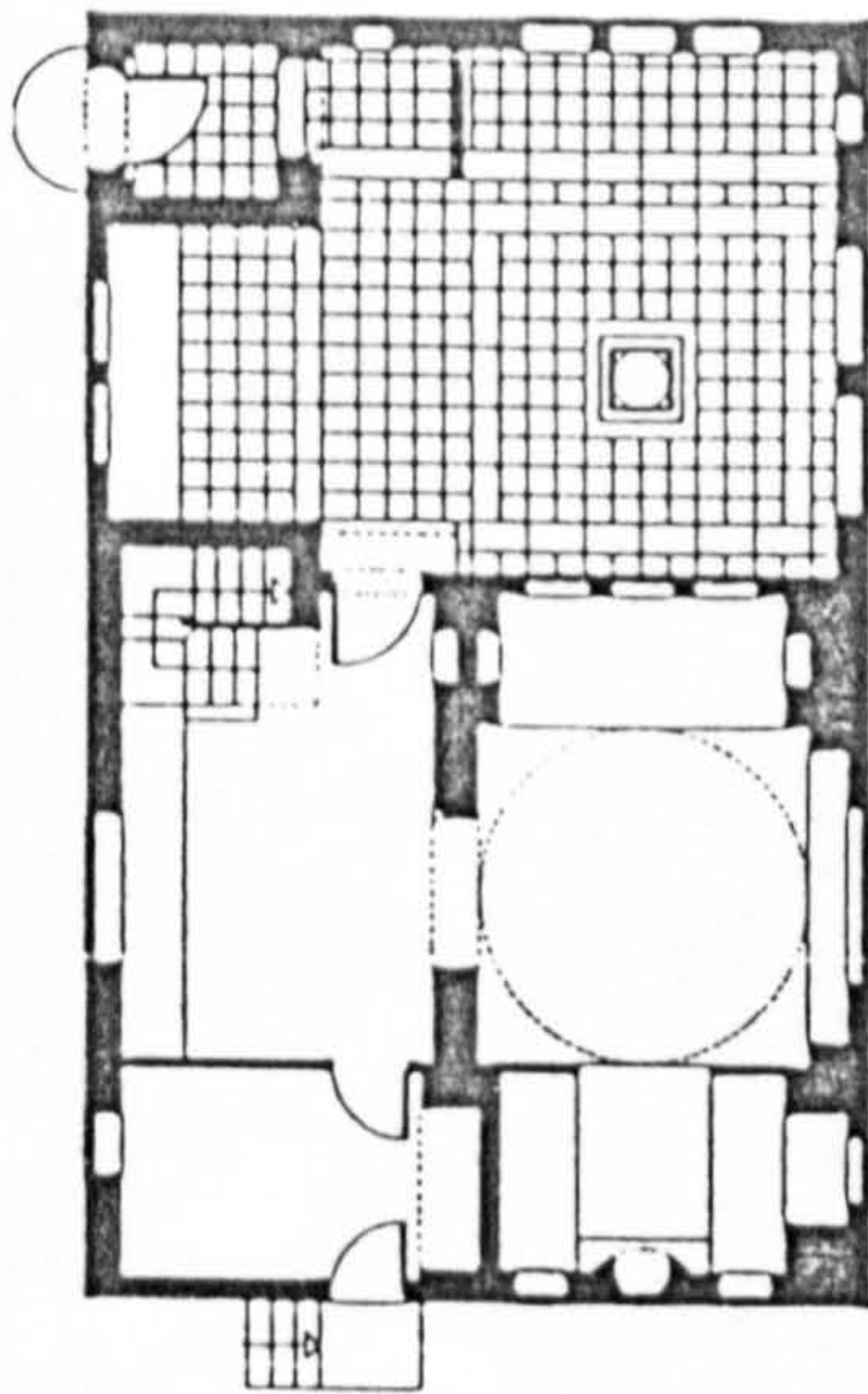
One of the real challenges in Algeria today, would be to combine a just response to change with a search for deeper structures of meaning (a synthesis between old and new). Some of the most convincing recent results seem to rely upon the combination of

elemental qualities in Modernism with constants sensed in local traditions. Among these one could cite, for example, Rewal (1982)[8] in India and El-Wakil [9] in the Middle-East (see figure 8.1). Rewal's 'Asian games village' achieved some international recognition as a refined combination of modern housing principles and ideas derived from local traditional desert towns.

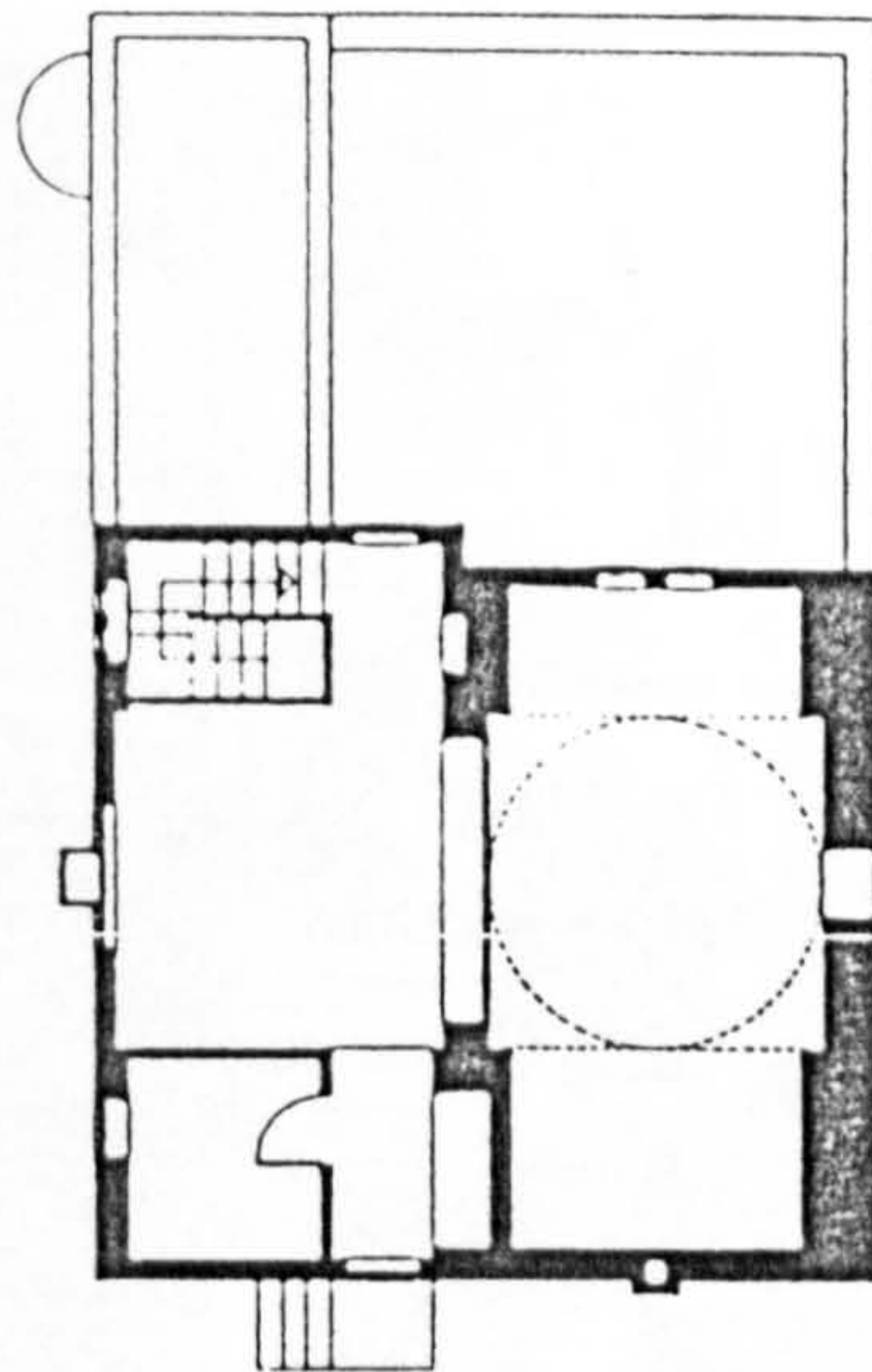
A sensible combination of modern nationalism with traditional local patterns seem to have been achieved by Daz (1977)[10] in 'Shustar' new town, Iran. Erected to provide accommodation for the workers of a large new industrial complex, this town took its form from a rationalisation of the intricate maze of mud brick courtyard houses of a neighbouring old town. Narrow pedestrian streets run parallel to the central tree-lined boulevard; they were carefully orientated to avoid endless vistas. Each house used the traditional organisation of multi-functional rooms arranged around a central courtyard with roof terraces for sleeping on (fig 8.2).

Another project which was able to respond to local and regional variations is the 'Dar Lamane housing scheme' in Casablanca, Morocco [11]. This scheme won the 1986's 'Aga-Khan Award' for Architecture, and the jury qualified it as: "One of the most successful and sophisticated low cost housing schemes ever to have been attempted in Africa" [12]. The key to success of this scheme of over four thousand (4000) family units seems to be in the basic planning which 'consciously' resembles the spatial organisation of traditional

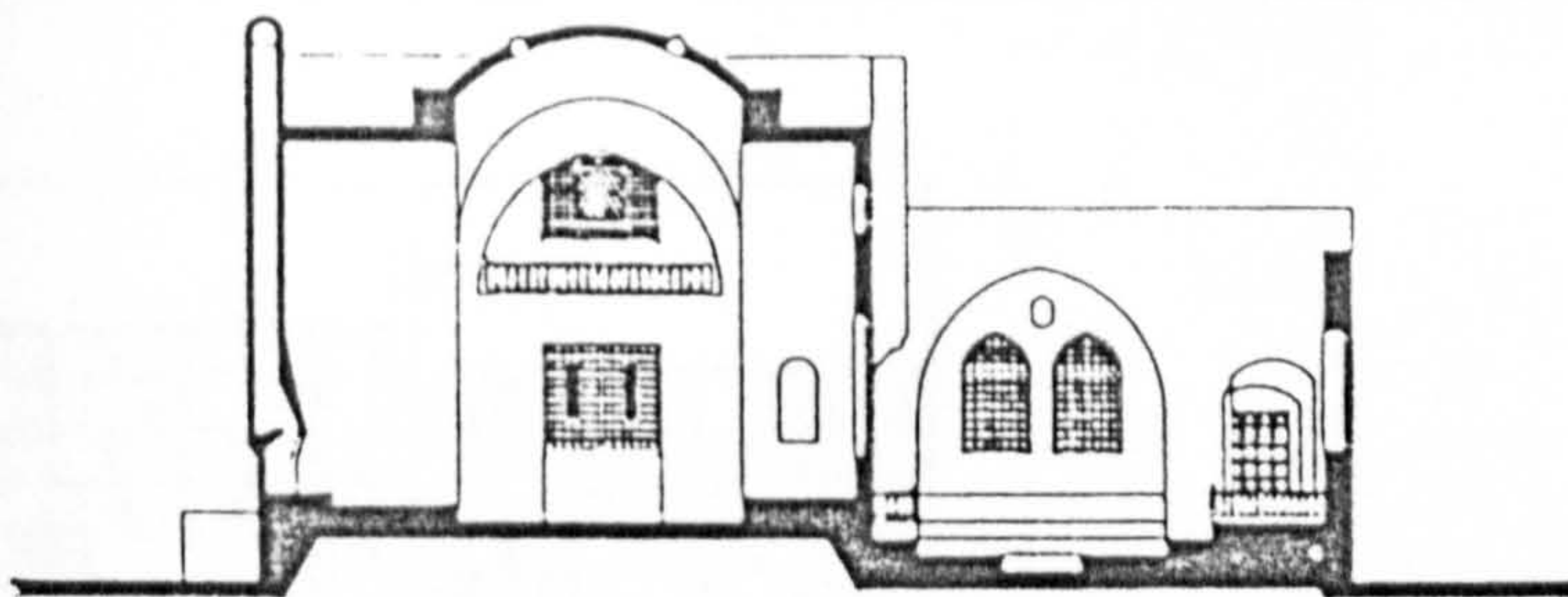
FIG(8.1): A TRADITIONAL HOUSE THAT RE-USES
MANY IMMEMORIAL PATTERNS, CAIRO, EGYPT.



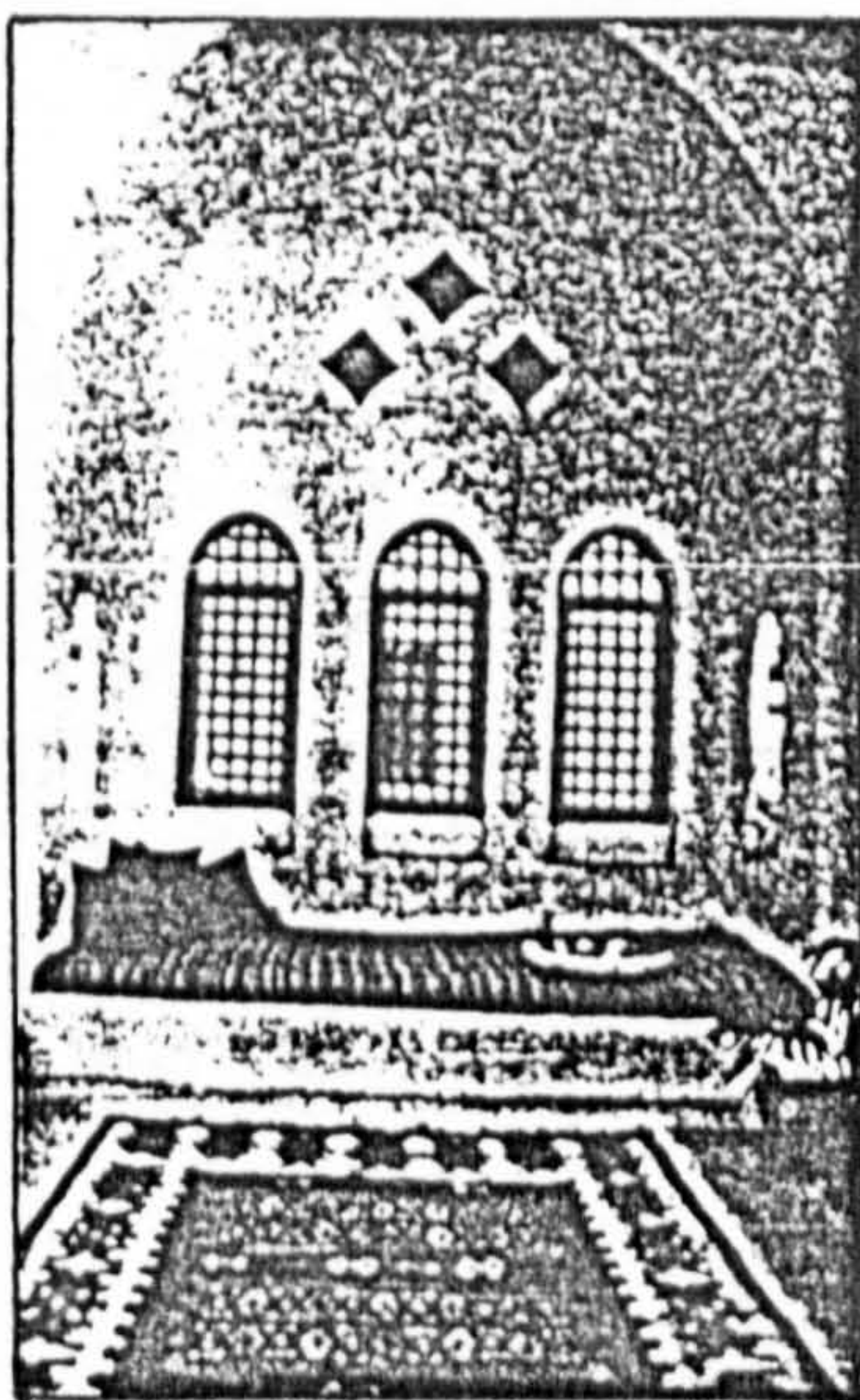
GROUND FLOOR PLAN



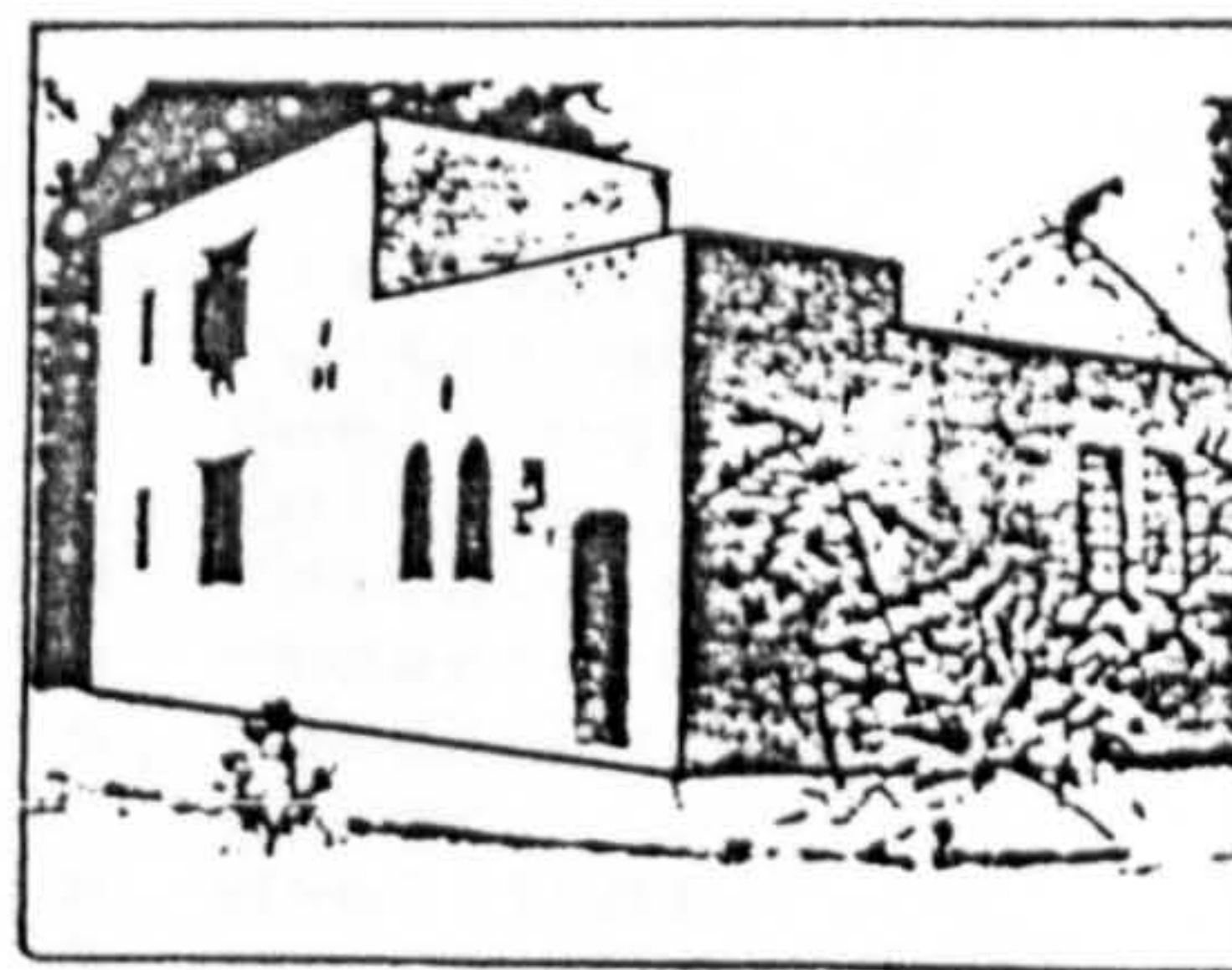
FIRST FLOOR PLAN



SECTION

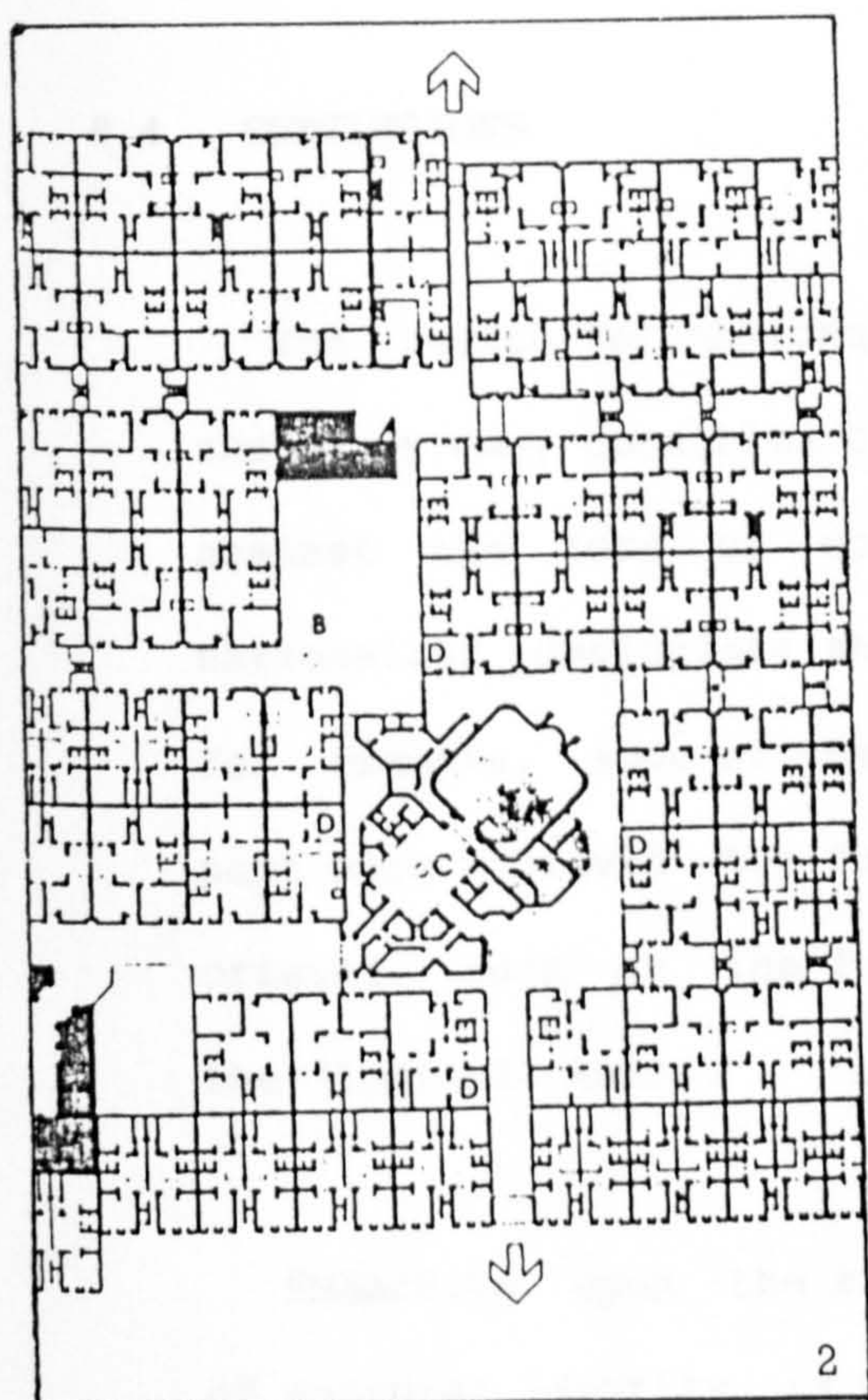
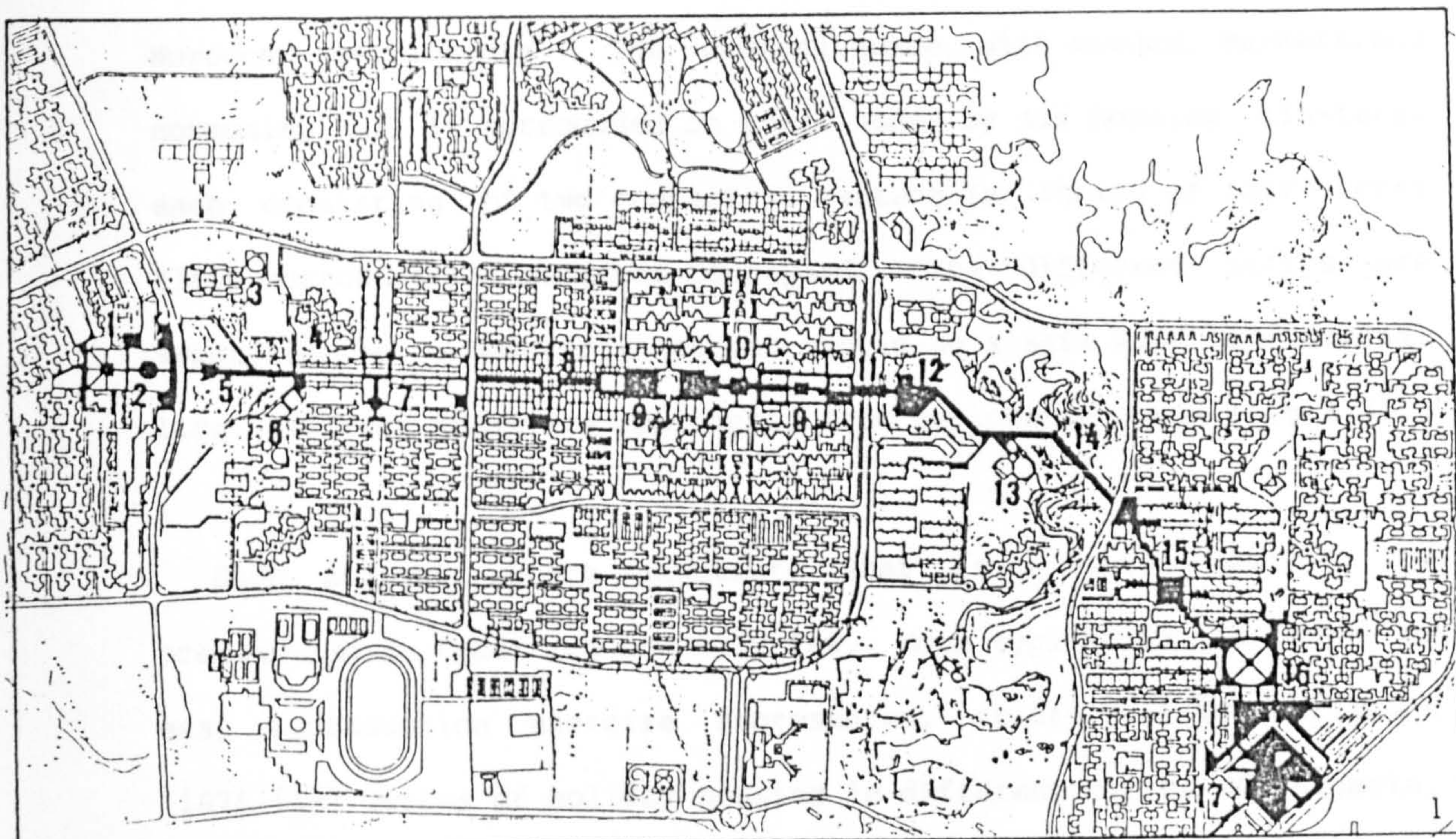


Sleeping alcove.



The relatively non-committal
street facades.

FIG(8.2): SHUSTAR NEW TOWN, IRAN.



- 1 General layout of the new town.
 - 1, Persian garden
 - 2, Dwellings and shops
 - 3, College of technology
 - 4, Primary school
 - 5, Pedestrian bridge
 - 6, Secondary school
 - 7, Bazar
 - 8, Dwellings
 - 9 and 17, Open Space
 - 10, Shopping centre
 - 11, Small shops
 - 12, Civic Centre
 - 13, Main Mosque
 - 14 and 16, Public garden
 - 15, Shops and dwellings
- 2 Layout of a quarter
 - A, Newsagent
 - B, Pedestrian space
 - C, Mosque
 - D, Dwellings

Moroccan settlements. The central space, with mosque, markets and community hall is surrounded on three sides by six housing clusters, each consisting of two concentric rectangular strips of four-storey flats surrounding a communal courtyard. The different strips are separated by a pedestrian street providing a safe area for communal life. Parking areas are approached from peripheral roads (fig 8.3).

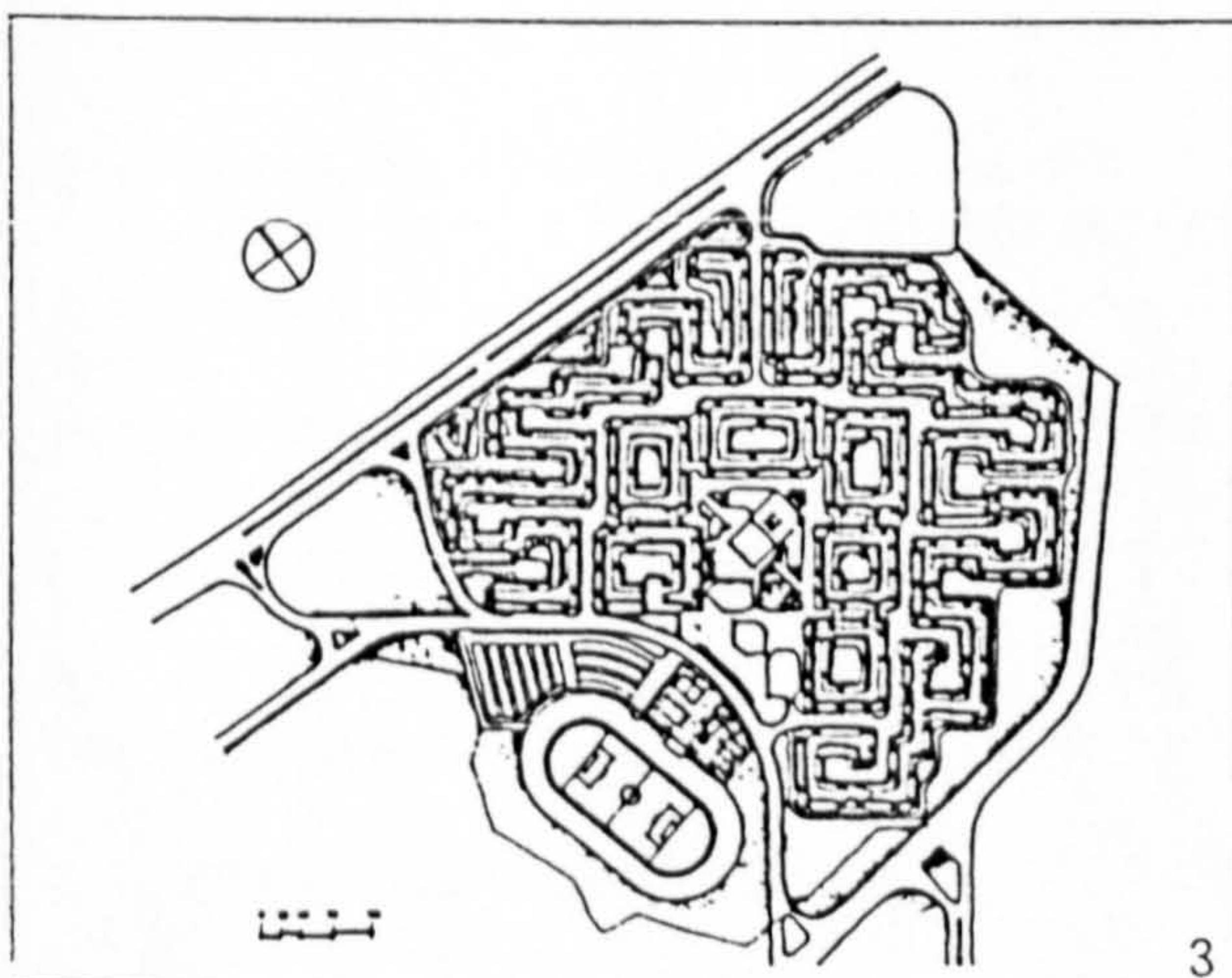
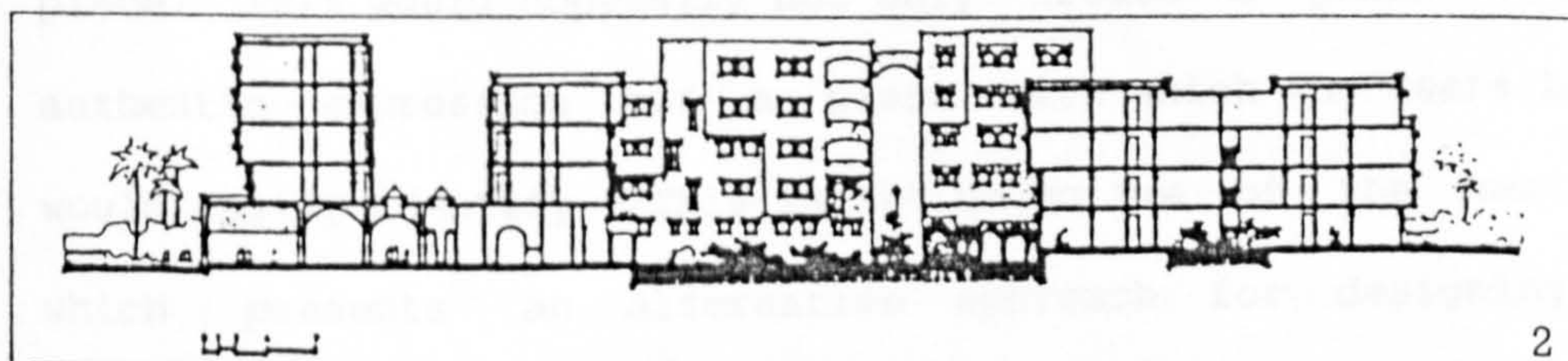
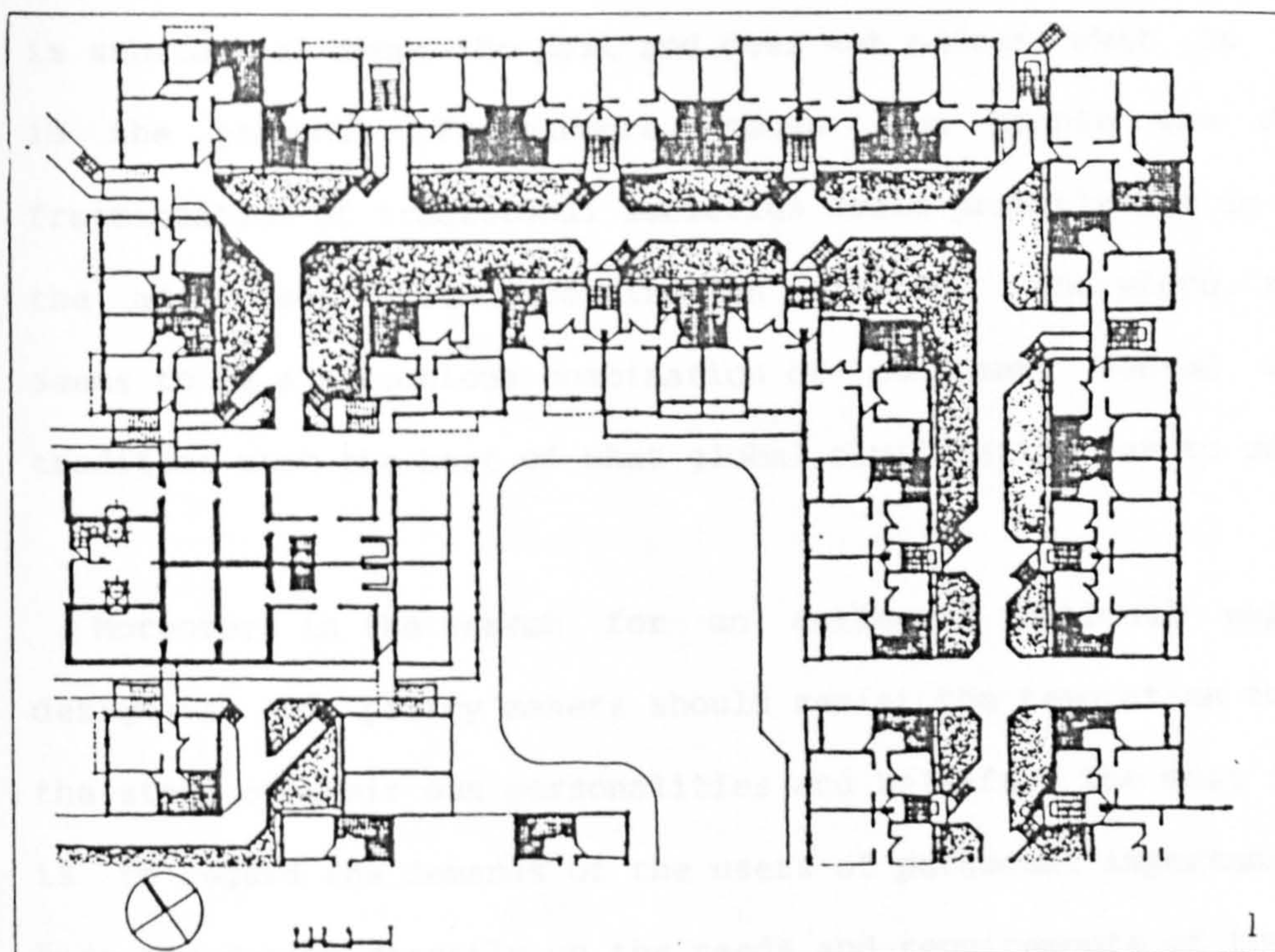
Such attempts which penetrate what is of lasting worth in the present and in tradition are only few. More typical is the sort of easy reproduction exercise represented, at its best by Pouillon's (1975)[13] series of holiday housing in different cities of Algeria, which makes no concessions at all to either climate or tradition.

8.4 CONCLUSIONS

The search for national 'roots' is not specific to Algeria, it is shared by many countries of the developing world, and is a reaction against the loss of continuity between past and present. However nationalist ideologists should not be allowed to be too xenophobic. For example, some of the highest peaks in the Islamic architectural past were achieved when fusions occurred between types of varying origins, such as the Turkish/North-African phase out of which grew the "typical" kasba.

Embarking upon the reproduction of local traditions for the sake of cultural identity, is not the answer, as this fails to update what

FIG(8.3): DAR LAMANE, PUBLIC HOUSING SCHEME IN MOROCCO.



1,2 Plan and section of one of peripheral courts which, consist of two parallel blocks of housing.

3 Layout plan: Central space is surrounded by six housing clusters.

is substantial about the past and does not address what is pressing in the present. Furthermore, those same people who decry the fragmentation of traditional societies would probably not do without the advantages that modernization affords. Therefore, the ideal seems to be a harmonious combination of constants sensed in local tradition with the best of what global civilisation has to offer.

Moreover, in the search for an authentic national expression, designers and policy makers should resist the temptation to impress the stamp of their own personalities and beliefs. The most important is to regard the demands of the users of paramount importance and to base any design directly on the needs and requirements of those users with the commitment of finding unique responses to each particular place. This would hopefully not only create a place with unique authentic expression but a place with which the users themselves would easily identify - This is the objective of the next chapter which presents an alternative approach for designing culture responsive environments.

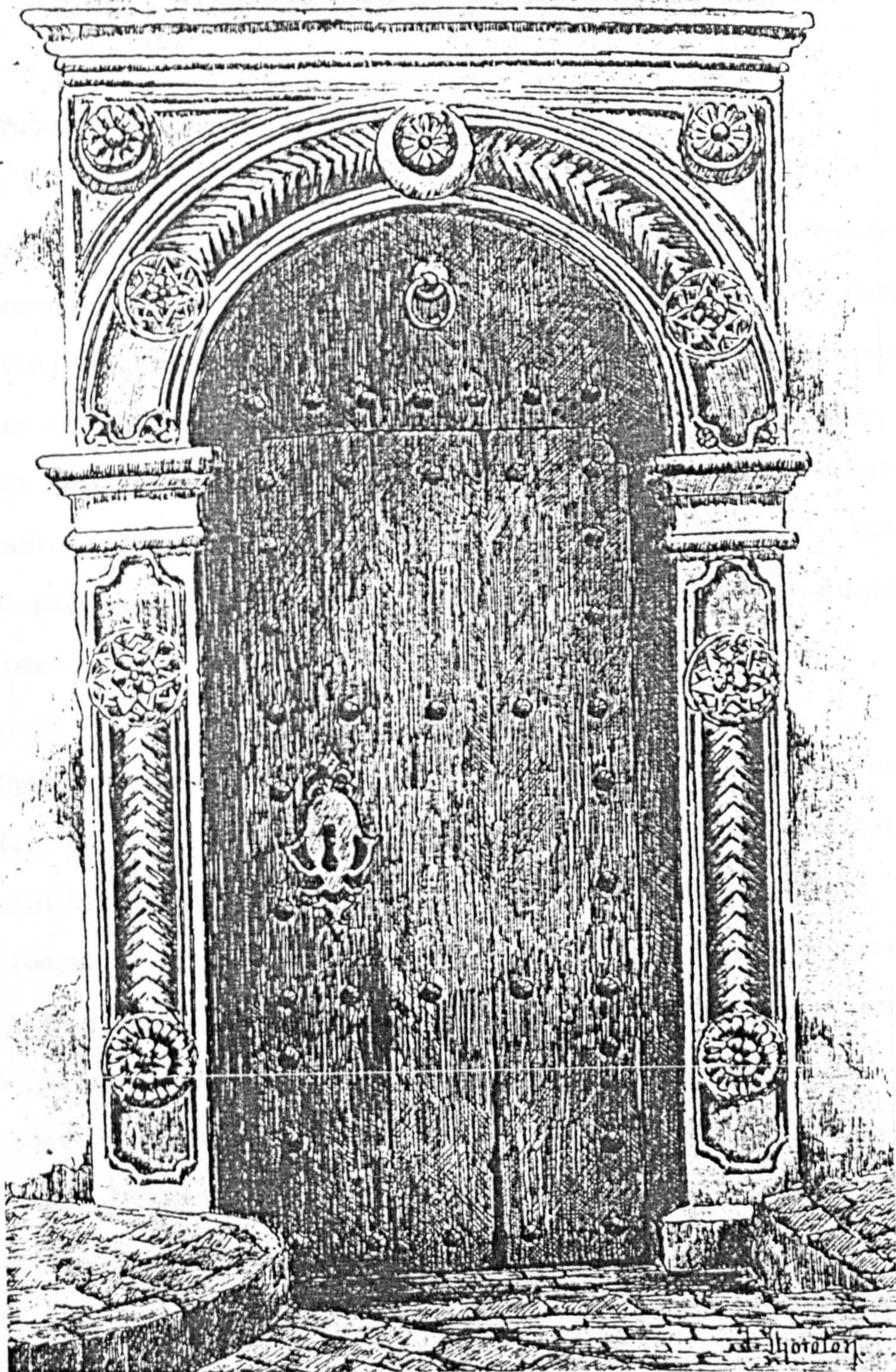
8.5 NOTES AND REFERENCES

1.
Curtis, J. "Modern Architecture since 1900." Phaidon, Oxford 1982. Chapters 25 and 27.
2. Breese, G.(ed.). "The city in newly developing countries." Prentice-Hall. New Jersey, 1969.
Turner, J. and Fichter, R. (eds.). "Freedom to build: Dweller control of the housing process." Collier-Macmillan. London, 1972.
Ravetz, A. "Remaking cities." Croom Helm. London, 1980. Chapter 8.
3. Fathy, H. "Architecture for the poor: an experiment in rural Egypt." University of Chicago Press. Chicago, 1973a.
Fathy, H. "Constancy, transposition and change in the Arab city." In Brown, C.(ed.). "From Medina to metropolis." New Jersey: The Darwin Press. Princeton, 1973b.
4. All the fundamental beliefs in 'Modernism' were based on the rejection of the old, in every form. However, now, 'Modernism' is gradually widening its grounds to take in Post-Modernism in design, herbal and healing treatments in medicine,...
5. Correa, C. "Architecture and identity, Exploring Architecture in Islamic Cultures 1." Edited by Powell, R., Singapore, Concept Media for the Aga Khan Award for Architecture, 1986.
6. Danby, M. 'The conflict between modern values and cultural identity in Urban design.' Research paper, Centre for Architectural Research and Development Overseas, University of Newcastle Upon Tyne, 1983.
7. Fathy, H. 1973a. op.cit.
8. Rewal, R. Cited by Curtis, J. "Modernism and the search of Indian identity." i.e. The Architectural Review, vol.CVXXXII, no.1086, August 1987.
9. El-Wakil. "A traditional house that re-uses many immemorial patterns." In the Architectural review, Vol.CLXXX, no.1077, November 1986. pp.86/11-108/11.
10. Diba, J. "Shushtar new town, Iran." _In the Architectural Review, vol.CLXXX, no.1077, November 1986. pp.86/11 - 108/11.
11. Charai, A. and Lazrak, A. "Dar Lamane housing community,

Casablanca, Morocco." In The Architectural Review, vol.CLXXX, no.1077, November 1986, pp.86/11 - 108/11.

12. The Aga Khan Award for Muslim architecture is given triennially. The thrust of the Aga Khan programme is an attempt to recreate and celebrate Muslim Architecture. The Jury meets twice - First to review the projects which are recommended by selectors in each country. The jury makes a list of schemes which are visited and analysed by technical assessors. The assessors' reports are reviewed by the reconvened jury when it makes its final selection for awards.
13. Pouillon, cited by Deluz, J. "Apercu critique sur l'architecture et l'urbanisme a Alger." EPAU, Alger 1979. pp.198-206.

CHAPTER NINE



ALGIERS : DOORWAY IN THE RUE DE LA KASBAH

CHAPTER NINE

TOWARDS A CONTEXTUAL APPROACH FOR RESEARCH AND DESIGN

9.1 INTRODUCTION

Successive chapters of this study have shown that residential environments ought to be designed with an awareness of people's evolving values, systems and attitudes, and that it was inadequate to answer only pragmatic or functional requirements. In fact this study argues that it is essential to account for social and cultural variables not only when formulating design policies for the development of new residential environments, but also when renovating old ones.

Indeed, the case study of the M'Zab showed that because of the change of some social variables, some of the physical attributes of the old settlement of the 'Quartier des Anciens Moudjahidines' were no longer suitable. For example, the change in domestic technology and furnishing raised the need for a 'fixed cooking place', and for more specialised rooms. A renovation scheme that would have ignored the social variables and their dynamic character would have, perhaps, kept the courtyard as the main cooking place. In like manner, trying to create or to respect a 'prescribed cultural identity', would have also led to a complete depreciation of people's real needs and aspirations. Indeed, social and cultural variables are not only

characterised by their dynamic aspects, but within cultures there are many subcultures.

Concurrently, successive chapters of this study illustrate the need for an anthropological and contextual approach that examines the physical setting, the ways diverse groups of people interact with that setting and the different mechanisms, including social codes and behaviour protocols that regulate that interaction. The focus on cultural and social variables is considered important because as Banham (1973)[1] and others have stated, these variables order the use of available resources in prescribed ways. However this does not suggest that other variables should be neglected. On the contrary this study stresses the need for a more comprehensive approach that accounts for the whole range of contextually defined factors which are implicated in the design and use of the built environment, especially the residential one.

Apart from suggesting the need for a more comprehensive approach, this study also rejects the doctrine of determinism related to the design of residential environments. It is now accepted that physical variables are not determinants of behaviour but act as enabling factors [2]. The built environment is considered as a setting for human activities. It can inhibit or facilitate certain behaviours, but cannot however, determine or generate activities. In fact it could be even seen as an information system, providing possibilities for choice, with some choices being more probable than others.

Furthermore, the study not only advocates a non-deterministic interpretation but also the establishment of a better communication system not only between different professional practices and disciplines but, also involving the lay people.

9.2 ON DESIGNING CULTURALLY RESPONSIVE ENVIRONMENTS:

The second chapter of this study showed that culture was a far too broad concept to be directly useful in environmental design. Consequently it was suggested that the best way to deal with such a global concept was by 'decomposing' it. Culture being carried in the mind of people who actively perceive, evaluate and act; it was suggested that studying and understanding people's behaviour, the nature of their activity systems and their distribution in space and time as well as their latent aspects, their religious and social values, their kinship and social structures, their communication and privacy needs and the mechanisms used, their preferences and choices, would help towards a better understanding of these people's culture. Translating the various social variables into physical form would lead to the creation of culturally responsive environments. However, before being translated into physical form, peoples' social characteristics, needs and preferences have to be identified.

9.2.1 Involving people in the decision making process

Different procedures are available for revealing and studying people's behaviours, needs, attitudes and preferences. In the earlier chapters, some of them were analysed, and their strengths and weaknesses demonstrated. Finally it was concluded that it was unlikely that any single procedure could reveal the full and complete aspects and features of people's conceptions.

To understand people the designer needs to have complete and full information of people's interactions. This includes what is going on inside of them as well as what can be observed outside of them. This point has been argued by Canter (1977)[3] who demonstrated that there was a considerable value in treating users both as 'subjects' of research, in that they express their own viewpoints, and as 'objects' of research in which they are studied by observing them.

Furthermore, this study has shown that people take an active role in their environment, interacting with it and adjusting it to suit changing situations. Finding techniques which will yield adequate information on users' behavioural adaption and environmental control is therefore necessary.

In traditional attitude questionnaires, the questions about preferences are usually asked under unconstrained conditions, while in normal life there are always constraints of time and money.

Introducing 'trade-off-methods' would not only give a more realistic picture of people's priorities but would also allow a greater participation in the design decision making process.

However, despite their obvious advantages, multiple methods research procedures are still very rarely used. Questionnaire surveys are still the most widely used as many people still believe that statistical analysis is the only way to win arguments. Fortunately, it is now increasingly recognised that quantitative questionnaire data not augmented by qualitative data from other methods can provide a superficial understanding of important problems.

The concern is thus to provide designers with adequate procedures and techniques which will enable them to work effectively with the people involved, and understand how places are experienced in everyday life. Designers should understand that:

- Places being dynamic systems, changing over time and as a result of cultural exchanges, implies that this understanding must be continually updated as it is erroneous to set up a series of data or information which will stand for all times and all decision-making problems.
- Regarding the approaches where additional field observation techniques are used and where people's behaviour is observed and analysed, and inference of their preferences drawn, there is the problems of subjectivity which characterises the designer, and

all human beings in general. Indeed, one is always tempted to judge the situation in one's own terms rather than searching for a more suitable viewpoint. One's experience leads one to expect the subject to perform in certain ways. Reports and analysis of people's thoughts and feelings are usually measured and compared to one's own' thoughts, and sometimes personal preferences and thoughts interfere with those of the people studied. All this happens subconsciously, however. To mitigate it, researchers should all the time try to remind themselves that 'they could be subjective' and therefore try to look at the 'situation twice'. It could also help to work in teams and use statistical formulae as to make comparison of one's observations with those of other members of the team possible [4].

- Finally, to gather detailed information about a place cannot be done by an isolated person or even a small group. An institutional structure is needed so that researchers from different fields can share each other's skills to, analyse, classify and store the information obtained making it easily accessible to anyone interested. This organisation should also carry out, 'continuous small operational studies over time to update its knowledge, to allow for more comparative studies to identify constancy and change, and in the long run to allow a temporal and historical study of social change and its effect on built form.

The preceeding section has presented a framework for a sound knowledge base which could enriche our understanding of man environment interaction, and make more visible the needs and desires of users. However, although design professionals are aware and acknowledge the importance of environmental behaviour research, there is a very limited use of its findings. The so called 'applicability gap' has engendered criticisms of designers who have been accused of preferring to rely on their intuition and artistry and of social scientists for misunderstanding the nature of architectural designs [5]. What emerges from these accusations is that there is some difficulty in mutual communication between researchers and designers. The following paragraph attempts to identify the difficulties in this communications and give some suggestions for alleviating the currently quite unsatisfactory interaction.

9.2.2 Linking social research and design

The first recommendation is for a change in the form and dissemination of findings. Indeed, many designers complain that most behavioural and/or social scientists do not deliver the result of their studies in a form which can be directly used in the design process [6]. Developing a 'common and precise vocabulary' would not only bridge the communicability gap, but also increase interaction and 'feed-backs'.

The second suggestion is for a 're-orientation' of undergraduate level courses. In present Algerian architectural and planning curricula, when there is a mention of social sciences it usually refers to the basic methods of inquiry of social sciences, (particularly the questionnaire survey methods), the vital interconnection between social research and design is rarely mentioned. Introducing design as 'user-based', and including discussions of environment-behaviour research would prepare and help the student for future interdisciplinary collaboration.

In a like manner, including some courses on 'how designers make decisions' in social sciences curricula, would enable social scientists to better understand designers and present their research findings in a form that meets decision makers' schedules. Finally it is my contention that it is quite wrong to assume that there is an inherent difference between research and design. Research ought to be considered as a 'process' rather than just the methodological application of various assessment techniques. This process begins in the earliest stages of designing a structure, when investigations work with, and study, representative groups of potential users to identify their needs and preferences, and continues once that structure has been occupied and used, assessing and evaluating it in order to provide information to improve future designs and design processes. This involves project assessment and follow-up studies to provide a critique of results of new design work.

Furthermore, detailed comparative studies and analysis of extant built environments can help the designer not only to understand the pertinence of some fundamental principles related to the design of environments but also to identify tendencies for change, and therefore help the designer to plan and design for change. Indeed, the dynamic and active character of cultural and social variables imply that the needs and preferences of a group may change not only from generation to generation but through the course of the individual's life cycle. Moreover, successive chapters of this study have shown that people take an active role in their environment, interacting with it and sometimes adjusting it to suit changing situations. Providing them with designs that lend themselves to change, addition or subtraction would not only increase their involvement in their environment but would also give them the opportunity to personalise it and therefore identify with it.

9.2.3 Designing for potential adaptability

In contrast to deterministic interpretations of residential environments designs that seek a 'tight fit' between activities and spaces specially inside the dwelling, many researchers argued that alternative design strategies can stem from the notion of 'designing for potential adaptability' [7]. Indeed, throughout history, the provision of verandahs, roof spaces and the like, catered well for extendability and incremental improvements and thus for potential adaptability. Finding ways to facilitate easy alterations to suit

today's very rapidly changing needs and life-styles is thus necessary. This study has shown how the rapid developments in domestic technology, meant an expanding battery of household appliances, equipment, and furniture leading to a need for different spatial organisations, and also tending to 'fix' use of spaces in functionally specialist ways. An approach that would provide users with more direct control over their surroundings would not only give present users the opportunity of 'redesigning' their dwellings to suit their changing needs but would also enable the dwelling to be developed and adjusted over generations.

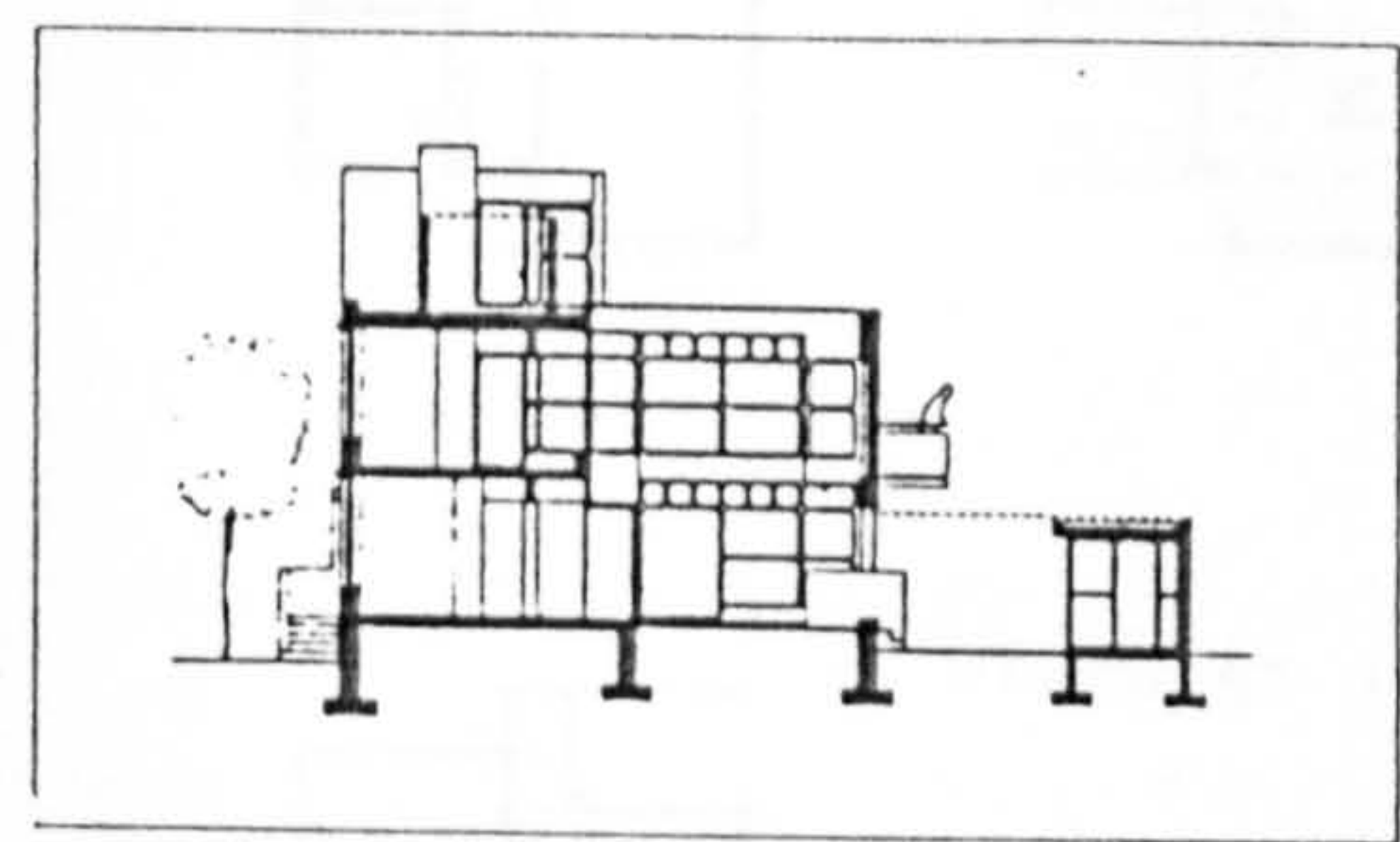
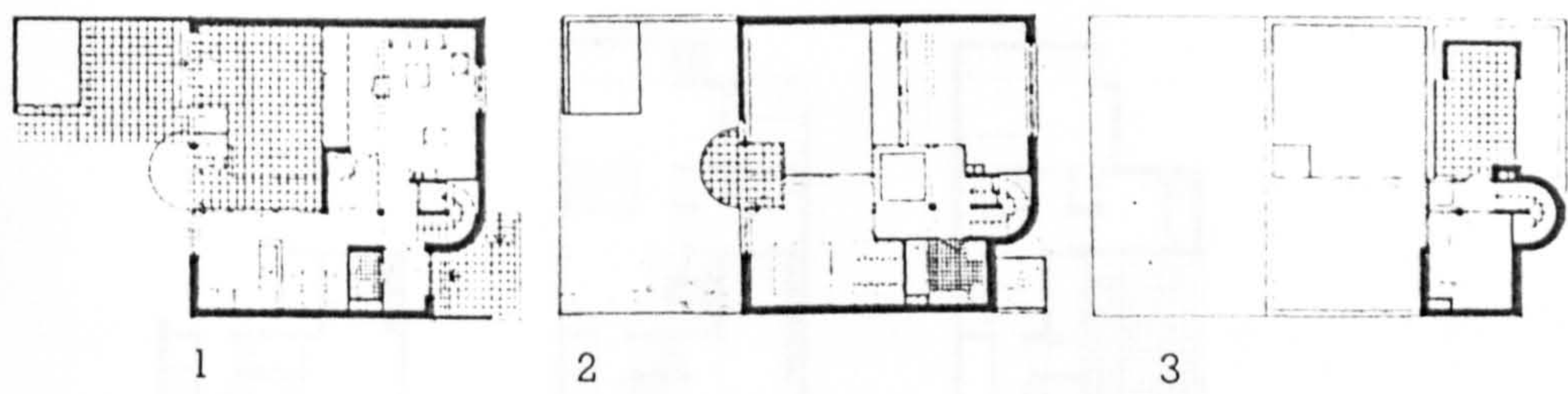
There are now several examples [8] of how potential adaptability could be applied to the design of residential environments. The 'supports system', whereby people are allowed to design their own dwellings within the 'support' offered by the designers, developed by Habraken (1972)[9] and his colleagues at the Stitching Architecten Research Institute in the Netherlands, has been used as the basis of many of them. Habraken's first 'support-structures' consisted of a concrete frame of a number of floors high, with horizontal and vertical communication systems stretching out through the town. The dwellings were assembled from manufacturers' catalogues and showrooms by people seeking a home and then slotted into the frame. He later developed the 'Support-Infill' system, (1979) and argued that a 'support' was not necessarily defined by the structural framework alone but represented the more permanent elements of a dwelling, i.e., elements less liable to experience change in space or over

time. Conversely, 'infill' elements were those features of a dwelling which were liable to be upgraded or changed in the short to medium range of occupancy.

Although the 'Support-Infill' system tends to be preoccupied with the technical means of providing flexibility both in terms of planning disciplines (e.g., grids service ducts) and of design (e.g., partition systems, storage units), and although building technology is usually taken as a starting point and the occupant seems almost superfluous to the conception, it seems to have had a quite strong appeal, and to have been quite successful in many European countries [10] (fig 9.1 and 9.2). This success seems specially due to the 'freedom' this approach gives to the renter. Indeed, to the renter, a flexible layout (even if it just consists of potential adaptability provided by moveable walls and fixtures) can be important as an extension of the very limited franchise he usually holds on rented property. Through the ability to create his own environment within a rented area, the renter can achieve in a different way some of the freedoms normally associated with ownership.

However if the over concern and emphasise on technical means has somehow restricted the use of the 'Support-Infill' system to some industrialised countries, the concept of 'Core Housing' whereby families are granted a plot of land with a basic core house has however, proved quite successfull in many countries of the developing world [11]; as compound walls not only maximise the inner space but

Fig(9.1): FLEXIBLE COURTYARD HOUSES, KASSEL DÖNCE, HOLLAND.



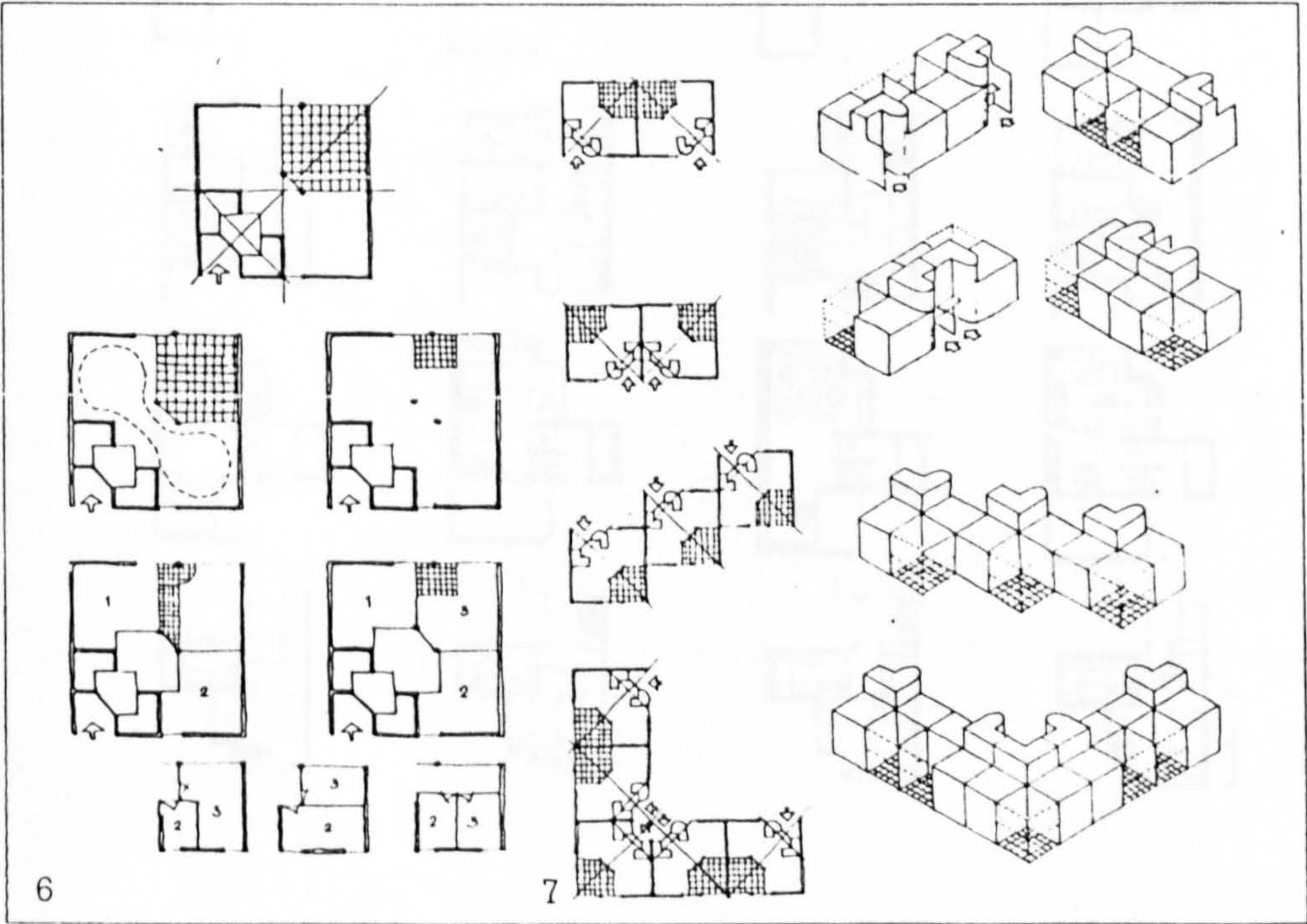
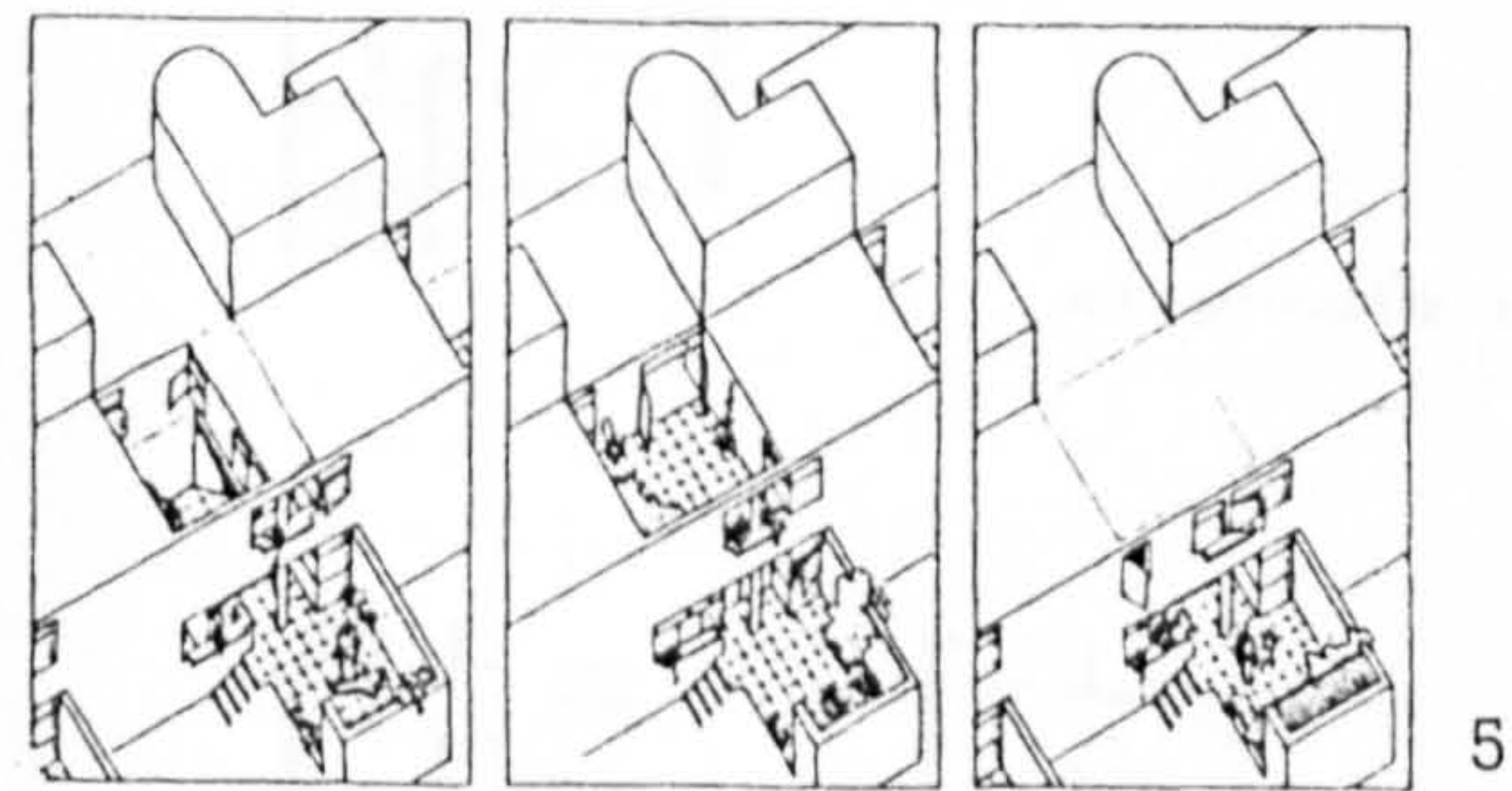
1, Ground; 2, First; 3, Second floor plans; and 4, Section.

5, Axonometrics of possible progressive infilling of courts.

6 and 7, Diagrams of latent flexibility.

6, Spaces/functions can interlink and even annexe court into interior. Various bedrooms arrangements are possible with or without filled-in courts.

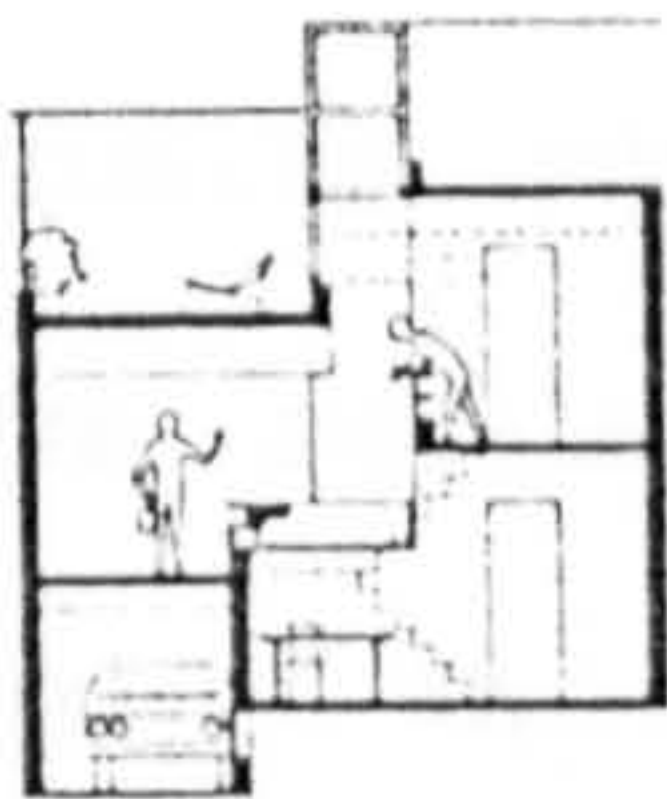
7, Possible combinations of units.



FIG(9.2): FLEXIBLE HOUSING; DIAGOON EXPERIMENTAL CARCASSE
HOUSES, DELFT, HOLLAND.



Plans of the different floors and section.



Alternate uses of the house's many levels.



allow maximum freedom to allocate space within the compound (fig 9.3).

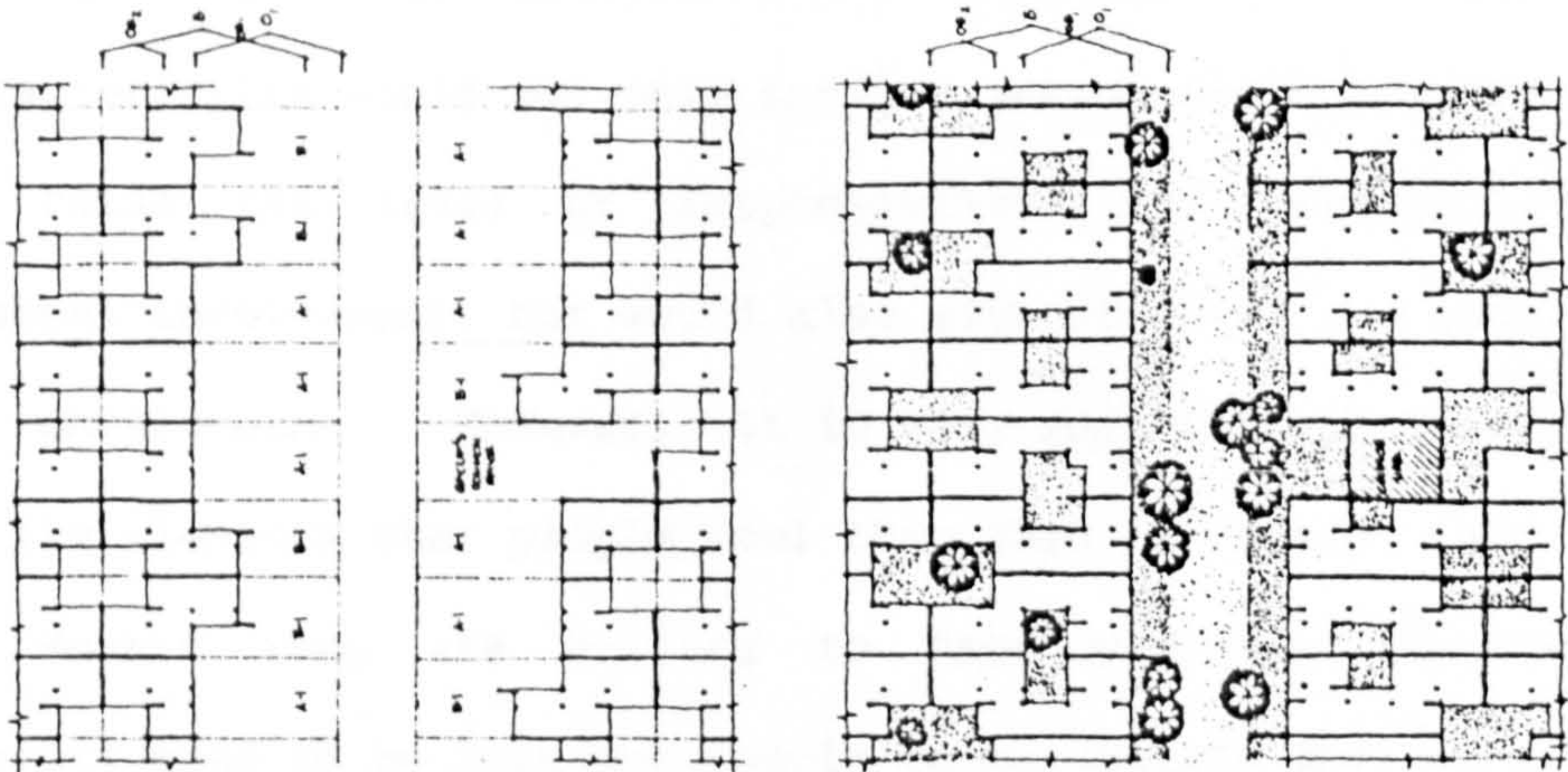
For example, this study showed how the function of the courtyard changed over time as the family unit itself changed and acquired new domestic appliances leading to the need for more 'function - specific room'. In this case providing people with an extendable core house consisting of the main services and amenities located on one or two sides of a courtyard would give the residents the opportunity not only to extend their dwelling by adding on rooms whenever required but also to have the type and size of courtyard desired. In fact, extendability has always existed in traditional housing as an expedient approach to making more space available without having to move.

In the past it was normally possible to extend a building as requirements dictated, because of greater availability of land, lack of development controls and regulations, and universally accepted and understood forms of constructions. Today, because of the complexity of our societies, regulations became quite necessary. However, this should not mean that everything needs to be controlled and planned, as not only it is quite difficult to plan everything but it is also quite undesirable. Many 'tight-fit' housing environments have been unsuccessful partly because they did not allow change.

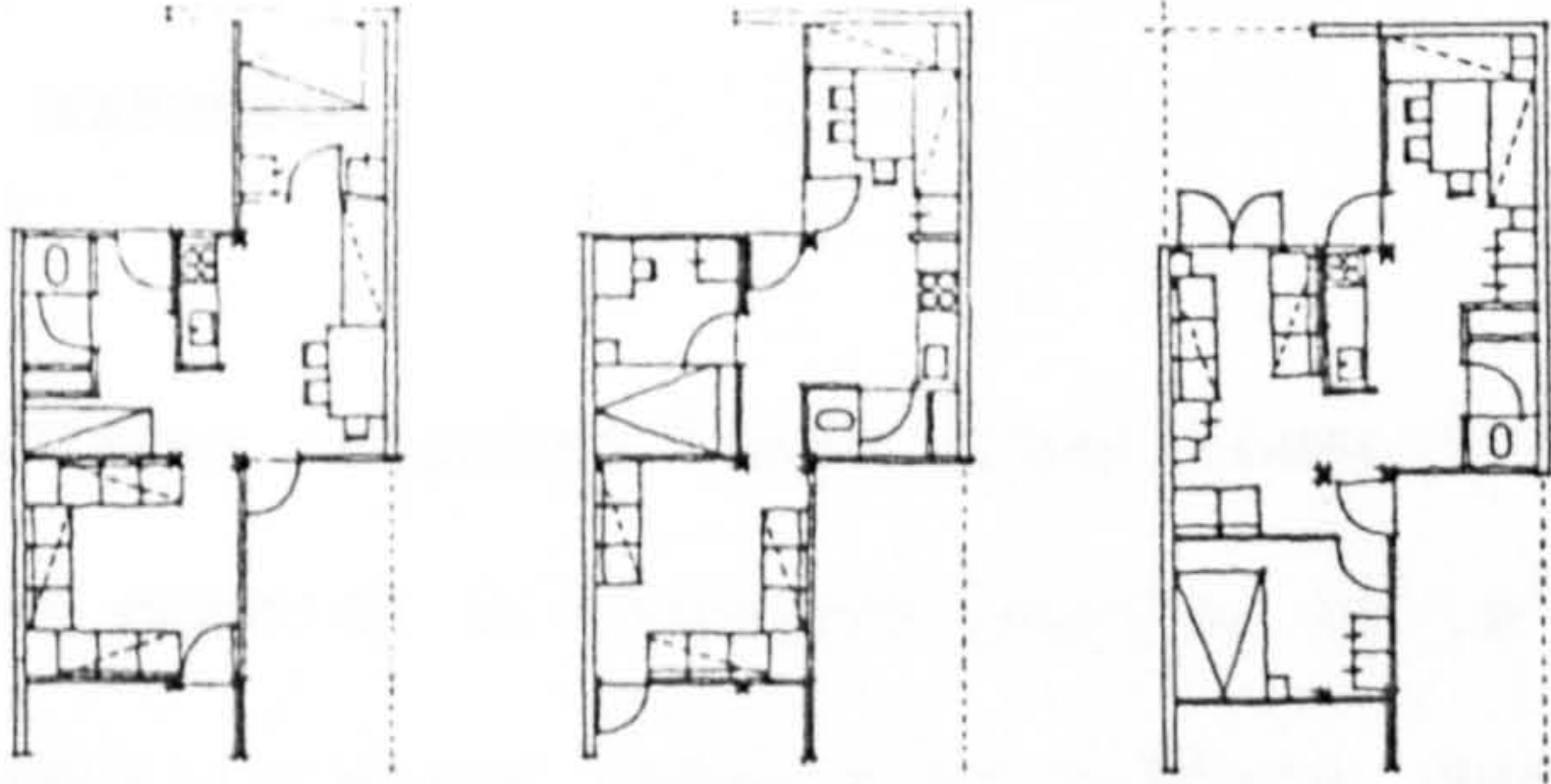
FIG(9.3): AN EXAMPLE OF CORE HOUSING, BANGKOK, THAILAND.

PLOT GROUPING OF MINIMUM CORE HOUSE

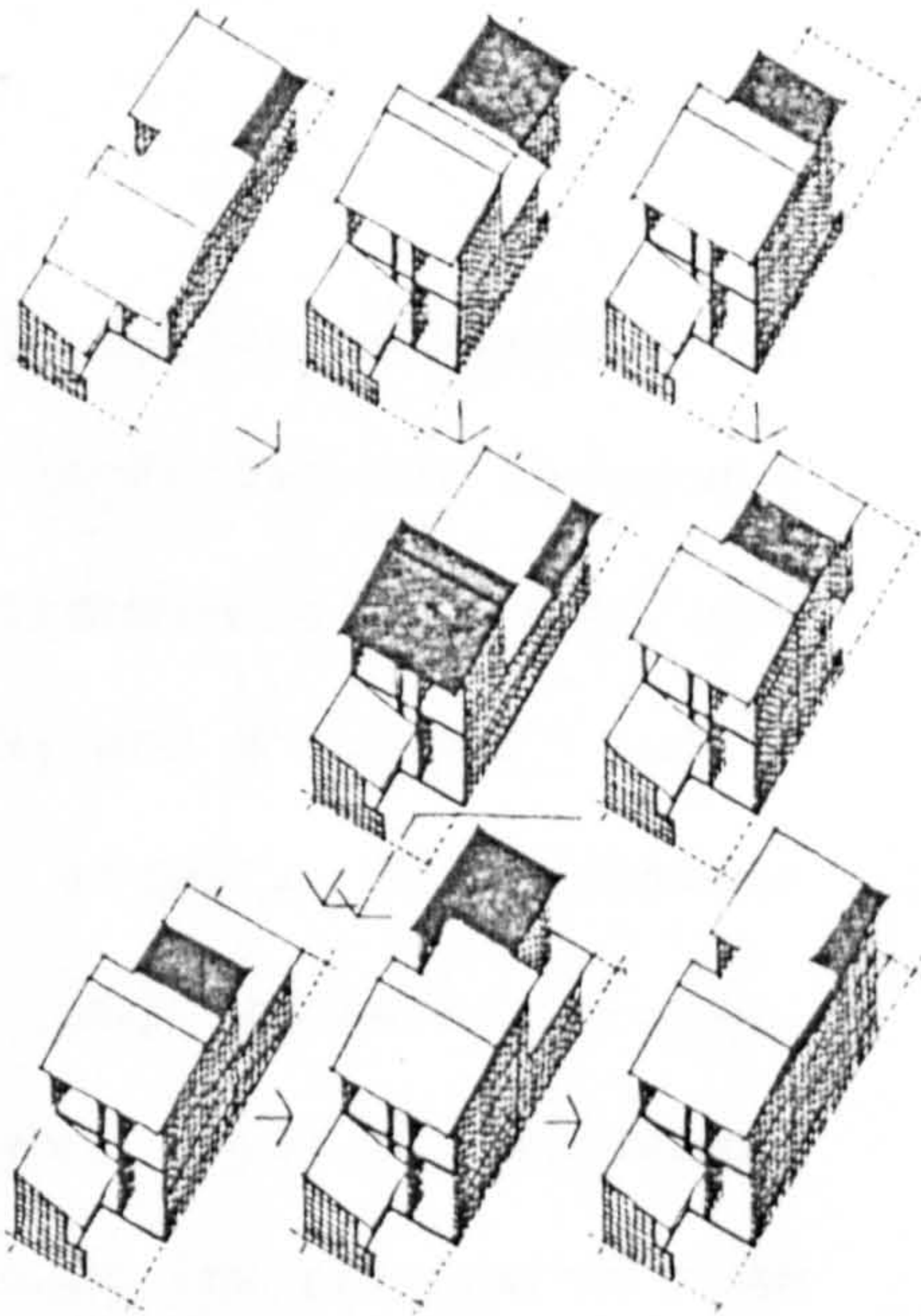
PLOT GROUPING OF FULLY GROWN CORE HOUSE



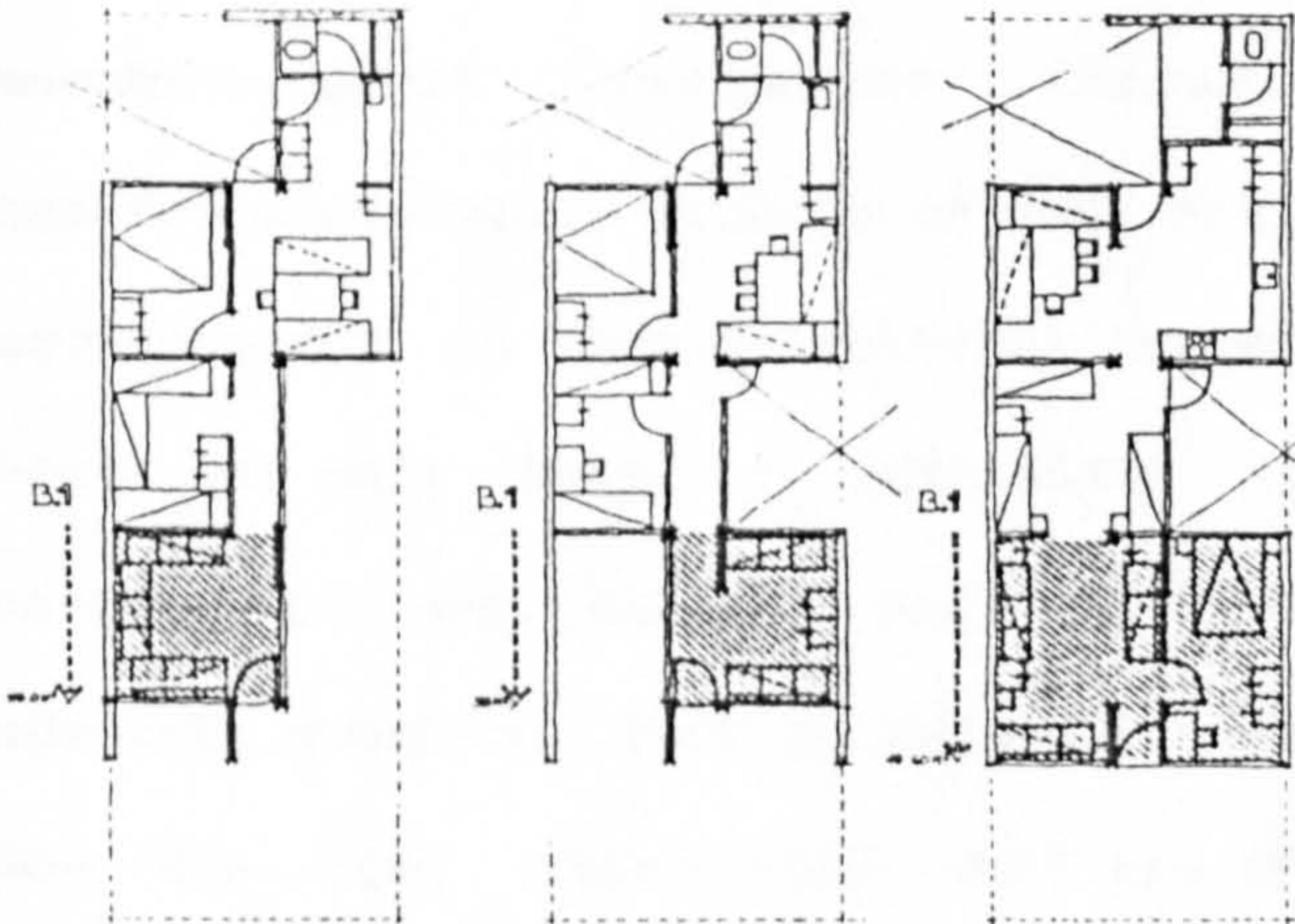
CORE HOUSE ALTERNATIVES



POSSIBILITY OF VERTICAL GROWTH IN SE-
QUENCE



POSSIBILITY OF HORIZONTAL GROWTH IN SE-
QUENCE



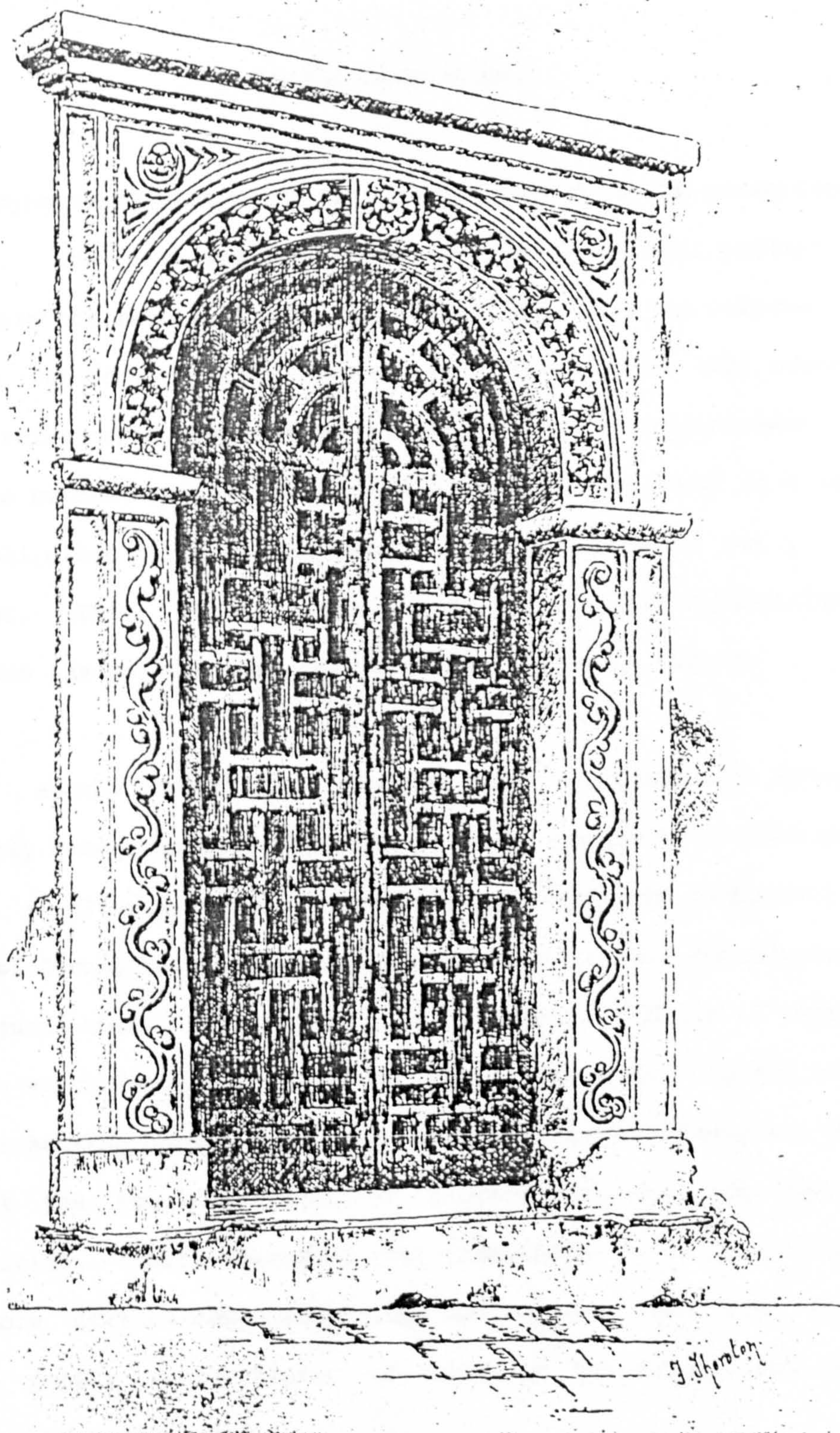
Enabling people to change and adapt their residential environments to suit and accommodate their changing social and cultural characteristics would not only involve active participation by people and raise the level of responsibility and satisfaction through personal involvement, but would also give richness and complexity to the environment. However, it is very important to determine which are the elements that people feel they need to control and what is the domain they are willing to have determined for them. Which elements need to be left for people to manipulate and control is, to a considerable extent, a matter of their meaning and their role in the culture core, and therefore needs to be identified rather than just assumed.

However, because large urban elements, will usually be beyond the direct control of ordinary people, it is very important for designers to identify which aspects of culture and environmental design are constant and invariant or change very slowly and which vary and in what ways, An approach seems to suggest itself: to consider man-environment interaction through time and cross-culturally. Careful comparative studies of the designs and uses of different environments in diverse cultural context through the passage of time would not only help to understand the dynamic relation between environment and culture but would also help to clarify many more specific questions such as what cultural variables are transmitted? How are they transmitted, what are the processes of acculturation, and what is the possible role of the built environment in all this?

9.3 NOTES AND REFERENCES

1. Banham, R. "The architecture of the Well-tempered environment." Architectural Press. London, 1973.
2. Rapoport, A. (ed.) "The mutual interaction of people and their built environment." Mouton, The Hague. 1976.
3. Canter, D. "Architectural psychology." Proceedings of the conference held at Delandhi, 1970. pp.11-18.
4. Altman, J. "Observational study of behaviour: sampling methods." In Behaviour, vol.49, 1974.
5. Pressman, N., and Tennyson. "Dilemmas facing social scientists and designers." In journal of Architectural Education, 36(4), 1983. pp.16-21.
6. Goodey, J. and Mattew, K. "Architects and information." Research paper 1, Institute of Advanced Architectural studies, Kings Manor, York, January 1971.
7. Pikusa, S. "Adaptability: designing for functional adaptability: a lesson from history." Architecture Australia, 72(1), 1983. pp.62-67.
Lawrence, R. "Housing, dwellings and homes." Wiley, 1987.
8. Habraken, J. "Supports: an alternative to mass housing." Architectural Press. London, 1972. (First published in Dutch, 1961).
9. For an overview of the different methods and more literature see Rabeneck, D., Sheppard, D., and Town, P. "Housing, flexibility?" in Architectural Design, November 1973. pp.698-732.
Rabeneck, D., et al. "Housing adaptability?" in Architectural Design, February 1974. pp.76-91.
10. Ibid.
11. Watz, S. "Women's housing needs in the Arab cultural context of Tunisia". in Ekistics 321, Jan-Feb. 1985. pp.23-34.

CHAPTER TEN



ALGIERS: ENTRANCE-DOOR OF THE MOSQUE, RUE DE LA MARINE

CHAPTER TEN

GENERAL CONCLUSION

The hypotheses with which this study started may be summarised as follows. The first was that house form and settlement patterns were not simply the result of physical forces, but also the outcome of a complex set of socio-cultural factors. That implied that there is a strong relationship between culture and the built environment which would be evident in the juxtaposition of different forms in a context where all other variables (climate, site, economics, etc.,) are constant. This, however, does not imply simple determinism, nor undermine the role of physical, economic and other issues.

The second hypothesis asserted that contemporary design is primarily concerned with resolving problems caused by obvious factors namely - climate, site, economics, politics and technology - but cultural forces have in general not been explicitly considered. It is argued that 'Normativism' is a common feature of government systems which ignores people's socio-cultural needs. Recent examples of mass housing hardly supported commonly desired activities, did not fulfill the required level of privacy and did not facilitate interaction. That suggested that traditional forms of environments were more 'culture responsive' than modern ones, and that given a choice people would prefer to live in the traditional forms of housing and settlement.

Finally, the third hypothesis, stated that change, either from within, such as from internal forces in the local economy, or as result of cross cultural influences, either by conquest, trade, and or mass media was sometimes inevitable and lead to changes in values and attitudes. There would therefore be some aspects of the old traditional house/settlement system which are no longer congruent with the new values and aspirations.

As far as the first hypothesis is concerned, the large variety of built forms suggest that there is more than just physical forces acting on the built environment. The case of the colonial city is further evidence of the role of socio-cultural forces in the shaping of houses and settlements. There is, however, very often a tendency to explain house and settlement forms only in terms of physical and economic forces. Of the many physical forces, climate and the need for shelter have received the greatest attention. In this frame of reference, people are said to be concerned with shelter and therefore, the imperatives of climate determine form.

It is agreed that shelter is a necessity for survival and that climate is an important factor in housing, but climatic determinism is too restricted and simple an explanation for the complex global distribution of housing forms. If climate were the predominant factor, there should be greater similarities in housing and settlement forms found in similar climatic areas. But, this is not the case, and is well illustrated in areas where different ethnic

groups coexist [1]. Therefore, as in each climatic zone there are many ways of building physically appropriate housing, climate should be seen as a modifier rather than a determinant of form.

Economic determinism as suggested by some writers also is inaccurate [2]. It has been shown that in most vernacular environments, the individual and society developed solutions based on the culturally conditioned perception of their needs and appropriate ways of dealing with them [3].

This does not mean that physical, economic and political issues were ignored. On the contrary, they are very much part of the decision making process, but they acted as constraints to choice and as a means of defining what problems must be solved. The solutions themselves were generally based on the socio-cultural foundations of the society, and economic factors very often functioned as constraints upon choice rather than as basic dimensions of choice themselves.

The similarities between the Islamic cities around the world illustrates the impact of the Islamic cultural framework on people's choices. It shows, for example, how Islamic values and attitudes towards social control and interaction led to introversion, both at the macro and micro levels of the city.

The strong contrast between Islamic urban and architectural aesthetics and art in general and Roman or other arts, is another testimony of the role of cultural and religious attitudes in the shaping of the built environment. As Islam's prohibitions against imagery and idols not only led to the suppression of all figurative decorations in Islamic art, but led to the development of distinctive geometric and abstract forms and motifs.

Another cultural element that shows the complex relationship between culture and housing is people's different conceptions and attitudes to the house and home environment. In some societies the house is used as the major setting for social interaction. North Americans and middle-class British, for example, are representations of this attitude. Other societies, such as Italians, relate differently to their built environment; houses are simply regarded as more private spaces in the total setting. In these cases streets play an important role in the daily life. They are places for social interaction as well as business.

Given the relationship between culture and the built environment discussed in this section, it seems reasonable to conclude that the ability of the individual of a given culture to feel at ease in any house/settlement system depends on the closeness of its form to the individual's own cultural ideal.

Chandigarh by Le Corbusier [4], stands as a testimony to the problems resulting from culturally inappropriate design. There designers, working under the inspiration of Le Corbusier ignored Indian culture in the effort to achieve a Grand Design. Shopping centres were designed for one-of-a-kind store as would be expected in Europe or North America. This was contrary to the Indian practice of dealers of similar goods congregating together. The shops were also located on one side of the street whereas the traditional bazaar maximises frontage by location on both sides of the street. As a result of these conditions, the lower apartments on the opposite side of the street have been converted to shops [5]. Users therefore respond to cultural discrepancies by adaptation of the structure.

At the unit level, the Indian attitude to the home and privacy was ignored. And in the absence of a visually separated reception room, many users changed the uses of the rooms. One of the bedrooms was converted into a guest room. Other 'misfits' include the absence of places for religious activities. In the original design, no space was provided for the family 'Altar' as a result built-in storage spaces were converted for this purpose [6].

Many 'misuses' were also recorded by the author, in the new settlement of Sidi Abbaz where most interviewees reserved the living room to male guests, and converted either the children's bedroom or part of the yard to a family living room, thus denoting the necessity of a separate male guest-room. Most people also added screens to

their windows.

Furthermore, the new settlement with its lack of appropriate behavioural settings, such as semi-private and semi-public areas was found to have considerable constraints on most outdoor activities. This shortcoming hindered outdoor social activities between neighbours and discouraged the development of relationships through occasional and informal outdoor meetings.

The new community was also severely handicapped because of the absence of the traditional skills and services supplied by weavers, tailors, shoemakers, as well as barbers, butchers, bakers and the like. The single 'souk-el-fellah' or supermarket does not offer the variety of products and the special atmosphere that usually emanate from traditional markets and bazzars, nor the friendly and personal service offered by corner shops. Thus, most inhabitants reported travelling daily to the traditional market of Ghardaia.

However, the 'misuses' are not peculiar to the new settlement. Many misuses were reported in the quartier des Anciens Moudjahidines, in the traditional settlement, where respondents complained about being compelled to do everything in the courtyard. This quite unexpected reaction shows that people's attitudes and values change over time, and that household technology and modern furniture have influenced people's conceptions and usages of places.

The media also played an important role in this change of attitudes. American soap operas, and even the local cooking television programmes which are broadcast from highly sophisticated fitted kitchens have, for example, led many women to think that cooking should be done in a kitchen.

The spread of education, and the increasing need for quiet private study places also influenced the need for functionally specific rooms.

These findings show that the second hypothesis has been partially refuted, as neither of the two settlements was totally responsive to the respondents' needs and desires. The lack of maintenance both in the traditional house and settlement was heavily criticized as residents reported the lack of modern amenities such as bathrooms, and good plumbing systems and servicing in general, as well as the irregular shape of the rooms, and the non accessibility of the streets to motor traffic.

The unrelated changes in the modern settlement, where design was mostly based upon the requirements of the motor car, without any consideration for pedestrians or local environmental conditions, were also contested. As was the replacement of traditional skills and shops by one superstructure, and the traditional screened openings by large French windows.

What emerges from these findings is that people's attitudes and values differ from those of the designers or policy makers. Planning and designing environments based on the designer's assumptions of what people would need or want is therefore deemed to failure. Moreover, people differ between themselves and what proved a success for one could be disastrous for the other. In the same manner what was very successful at one point in time could be a nuisance at another. In effect people values and attitudes are not static but evolve and change with time, and cross-cultural influences are as old as recorded history. They are even stronger now that technology and technological dependency have made interactions between all parts of the world not only possible but unavoidable. Living in complete autarky is increasingly difficult if not impossible (i,e; the case of China).

Denying the influence of nearly a century and a half of French colonisation on the Algerian society life style and attitudes would be unrealistic. The traces of French culture are everywhere, from the physical environment, to the dress, language, education, and sometimes even values and attitudes.

The dissatisfaction with some aspects of the traditional settlement, is another proof that cross-cultural influences affect people's attitudes to house/settlement systems, and assert the dynamic aspects of culture. This establishes the validity of the third hypothesis of the study.

However, as most changes happened within a very short period of time, very often during the life span of one generation, many conceptual conflicts between traditional values and aspirations arose. These conflicts are characteristic of a society in transition and are sometimes very well reflected in the housing people build for themselves. In most Algerian cities, this latter is a truly hybrid form which draws both on imported as well as on traditional models but eagerly adopts the technology of the age in which it is created. There is a marked preference for modern building materials and reinforced concrete frames are a 'must'. The treatment of the facades as an indicator of wealth and social prestige very often displays a surprising blend of local and foreign influences.

Within the house, the multi-purpose rooms have been replaced by functionally specific rooms, bedrooms, kitchens, family room and guestroom. The courtyard whose functional uses have been shifted to alternative spaces (kitchen, bathroom) is however, still existing although it is more a recreational and symbolic space than a utility space.

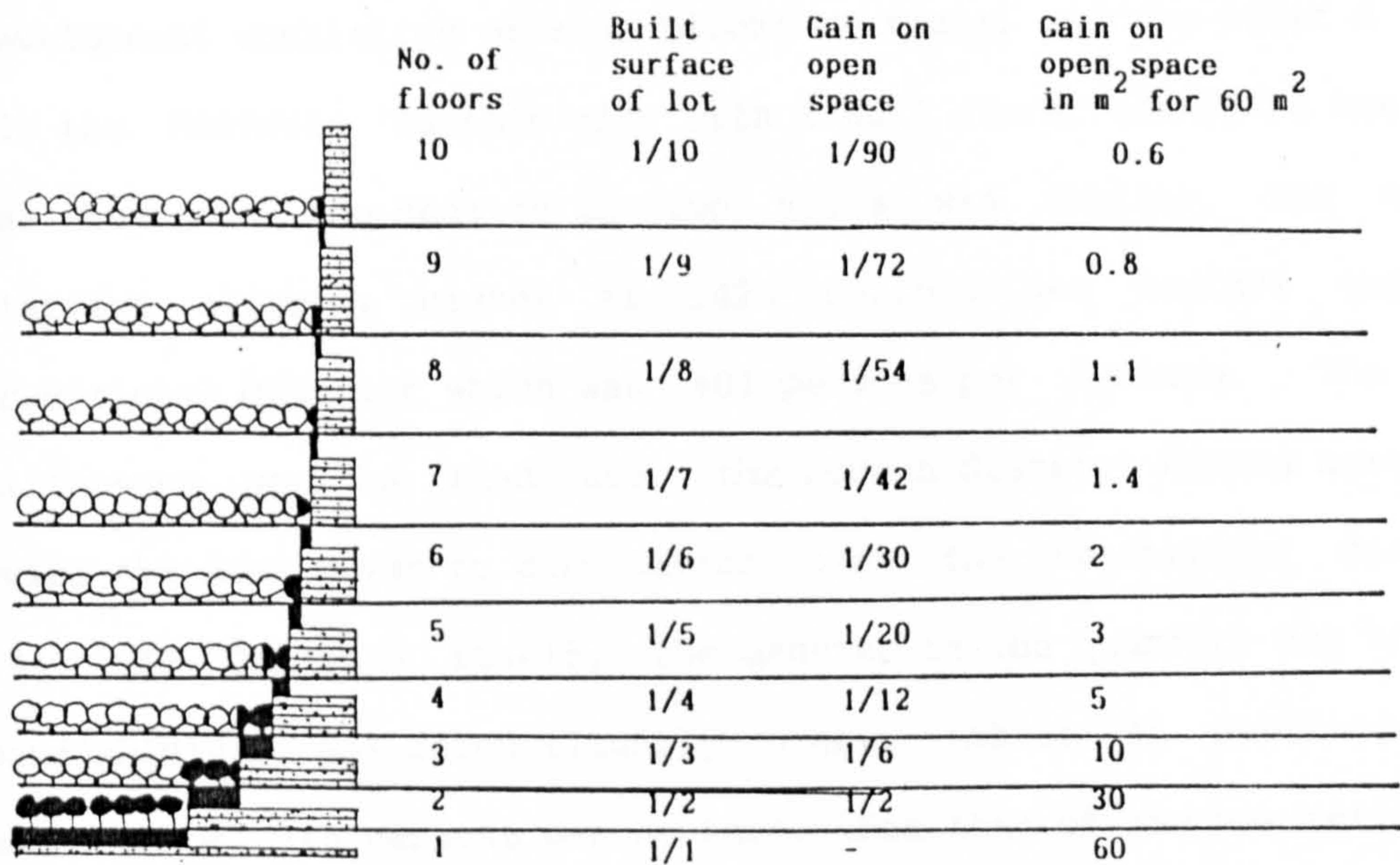
The conflict between traditional and modern values was also very much apparent during the trade-off game, as economical constraints restricted the already difficult choices respondents had to make. However, even then the courtyard was unanimously chosen. Yet this latter has most of the times been denied to them on the ground of economic constraints, although, it is now quite widely accepted that

high building does not necessarily mean a gain of land or money.

Indeed, many studies have demonstrated that land gained by building higher is in reality much less than generally supposed [7]. In fact, the gain of land decreases with the addition of floors. Graph (10.1), shows that for a dwelling of 60 sq.m, the gain of land would be half the total surface or 30 sq.m, if it built on two floors; $\frac{2}{3}$ of the total surface or 40sq.m, if it is built on three levels, $\frac{3}{4}$ of the total surface or 45sq.m, if a fourth level is added, and $\frac{9}{10}$ of the total surface or 54 sq.m, if a tenth level is added. However, if the gain of space is 30sq.m or 50 per cent, between the first and second floor, it is only 30 sq.m or 17 per cent, between the second and third floor, 5sq.m or 8 per cent between the third and fourth floor and only 0,6 sq.m or 1 per cent between the ninth and tenth floor. The total gain between the fifth and tenth floor is less than between the second and third floor. Furthermore, above the fifth floor a lift is needed which could use a higher space than the one gained. There is also an increase in areas of land surrounding a high building for compensating amenity space, protection of daylight for the lower floors, and for ancillary uses such as schools and playgrounds. The saving in gross land area therefore decreases per dwelling unit (graph 10.2).

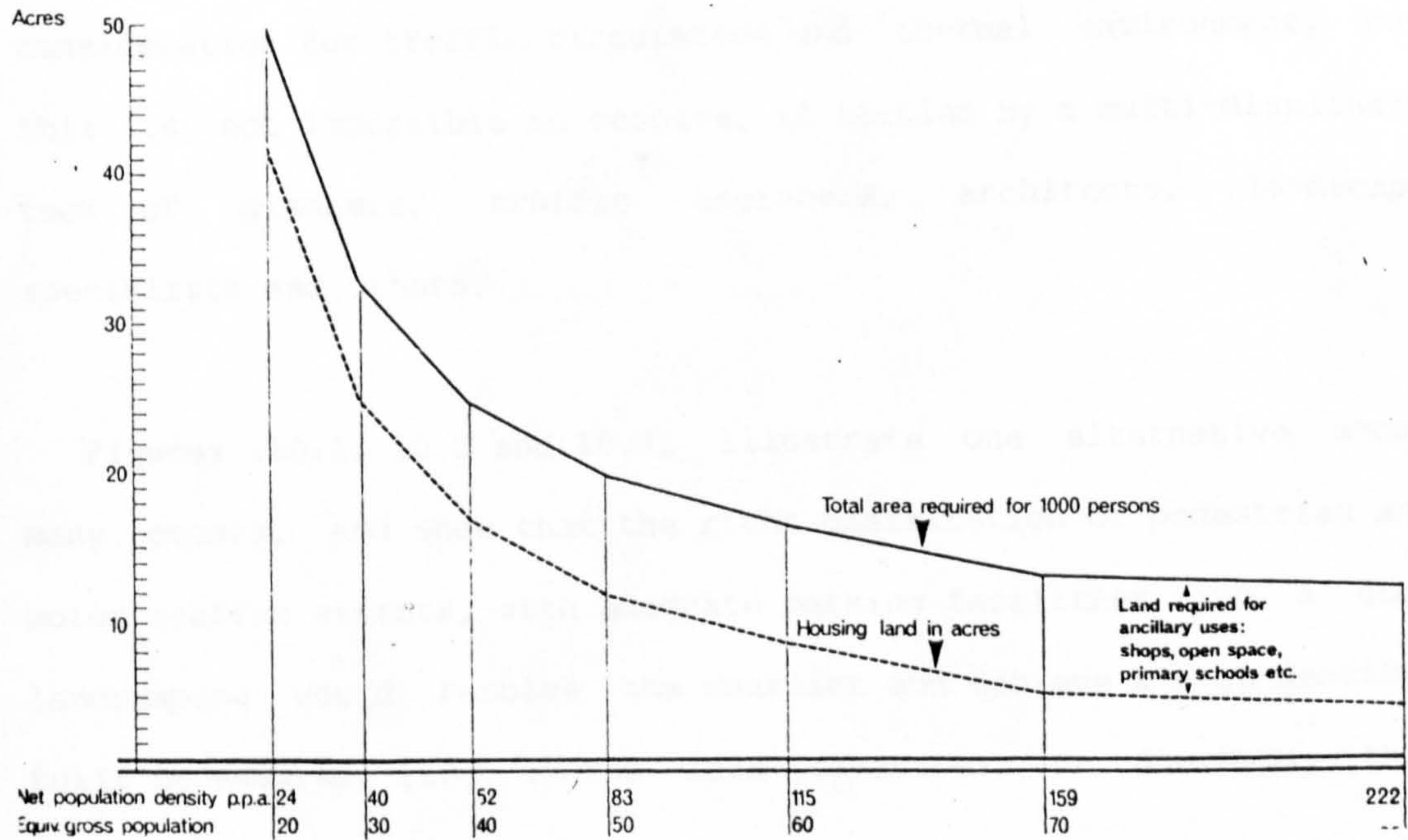
In the same manner, many other studies have shown that high densities could be achieved by low rise developments [8]. A comparative study of two areas in Cairo, Egypt, one a modern

Graph(10.1): High building and gain of land.



Gain in open space by building higher : in black
The Gain gets rapidly smaller

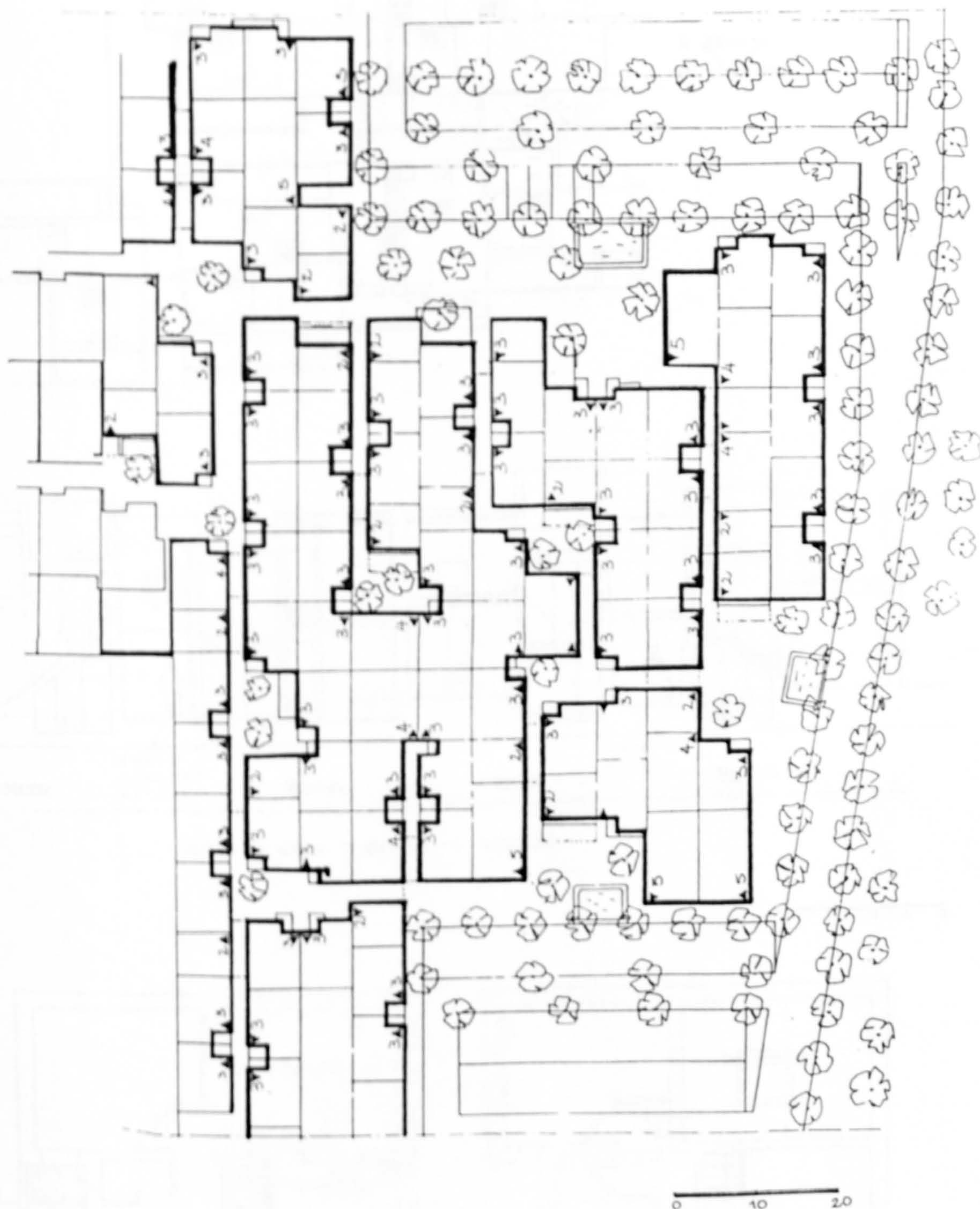
Graph(10.2): Saving of land at various densities.



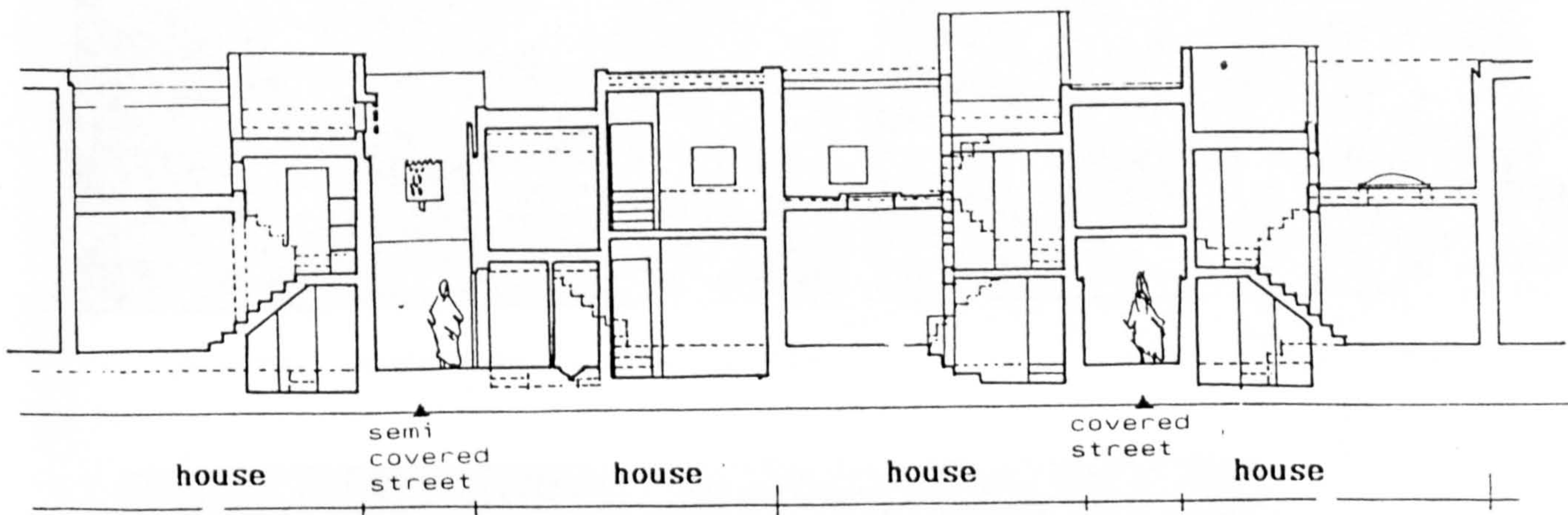
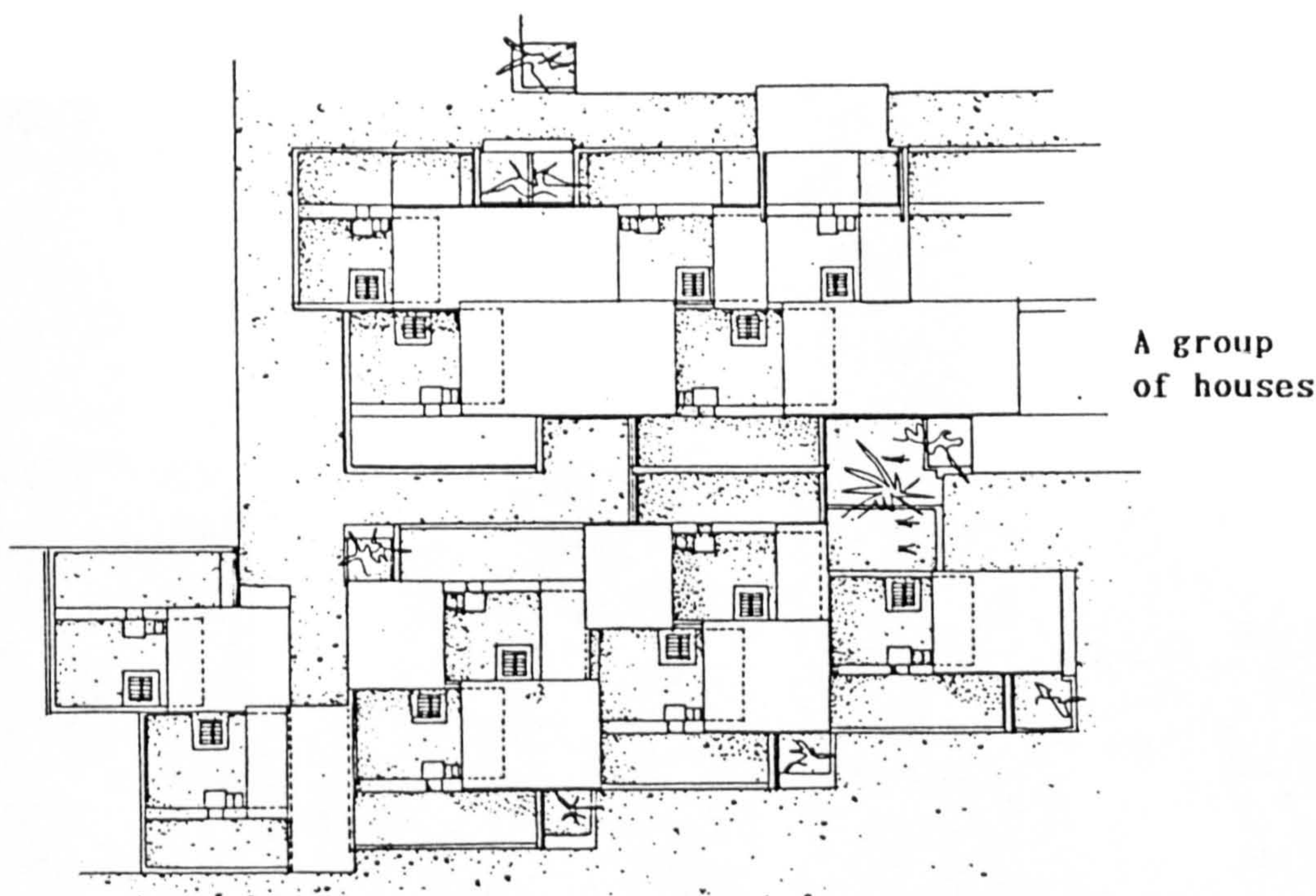
development consisting of slab blocks of flats, and the other a part of the historic Islamic city with 2 to 3 storey courtyard housing, has shown that the density of two areas was similar, the modern district slightly higher at 1428 persons per hectare than the traditional district which was 1401 persons per hectare. The main difference was in land use, the modern district having more than twice the area given to circulation than the traditional district [9]. In Ghardaia itself, the density in the quartier des Anciens Moudjahidines, was found slightly higher (about 45 dwellings per hectare or 315 persons per hectare) than that of the new settlement of Sidi Abbaz which was about 40 dwellings per hectare, or 280 persons per hectare. Obviously, the traditional area could not cope with motor traffic, however the predominance of the motor traffic has also made the modern area quite unsatisfactory for pedestrians. Furthermore, the traditional district has a better micro-climate than the modern one. A conflict would seem to exist between the consideration for traffic circulation and thermal environment, but this is not impossible to resolve, if tackled by a multi-disciplinary team of planners, traffic engineers, architects, landscape specialists and others.

Figures (10.1, 10.2 and 10.3) illustrate one alternative among many others, and show that the right distribution of pedestrian and motor traffic streets, with adequate parking facilities and a good landscaping would resolve the conflict and achieve a high density. Built by Ravereau [10], in the late seventies, in Ghardaia, this

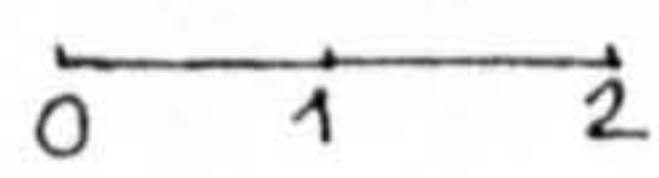
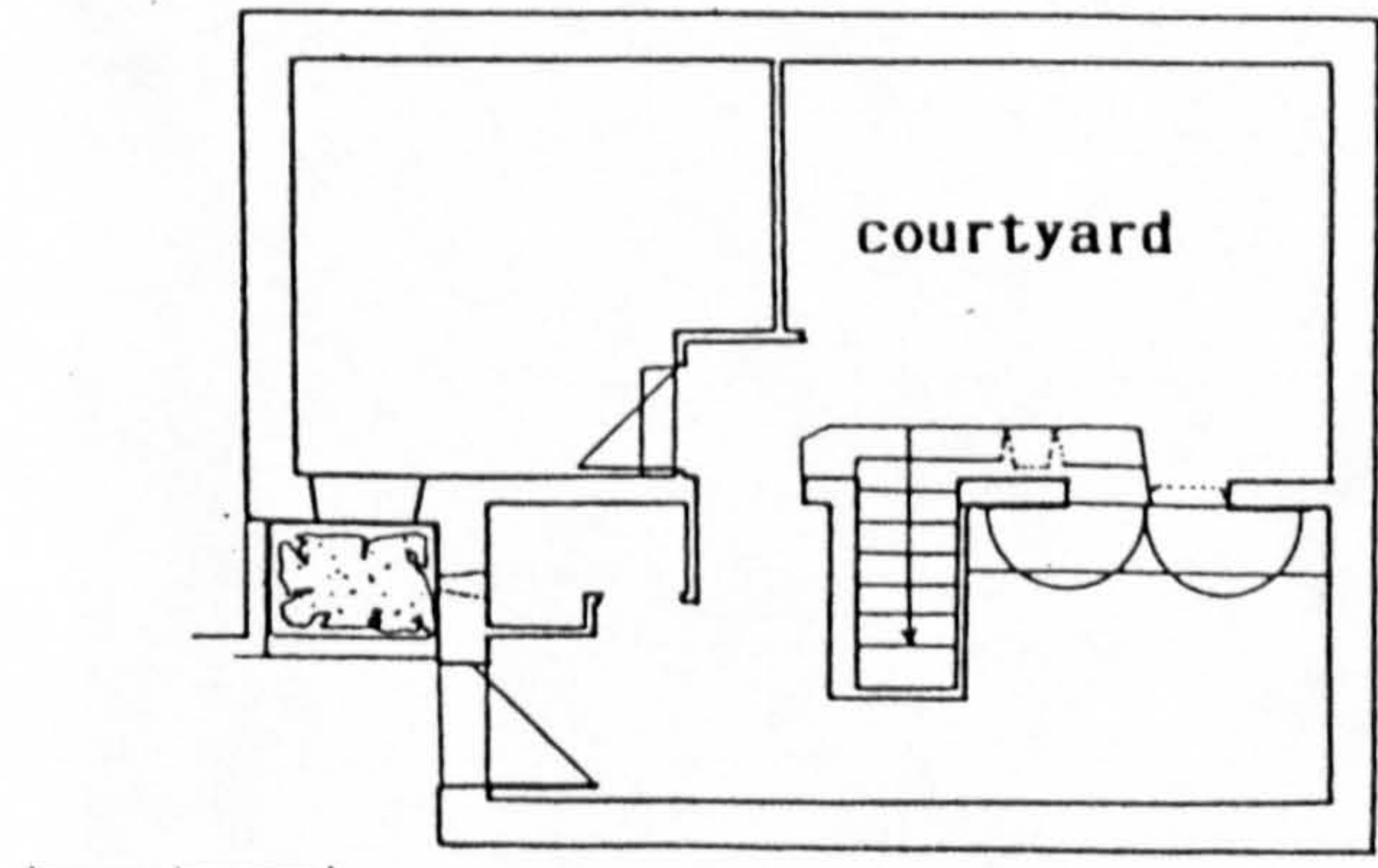
Fig(10.1): An example of high density courtyard housing - General layout -



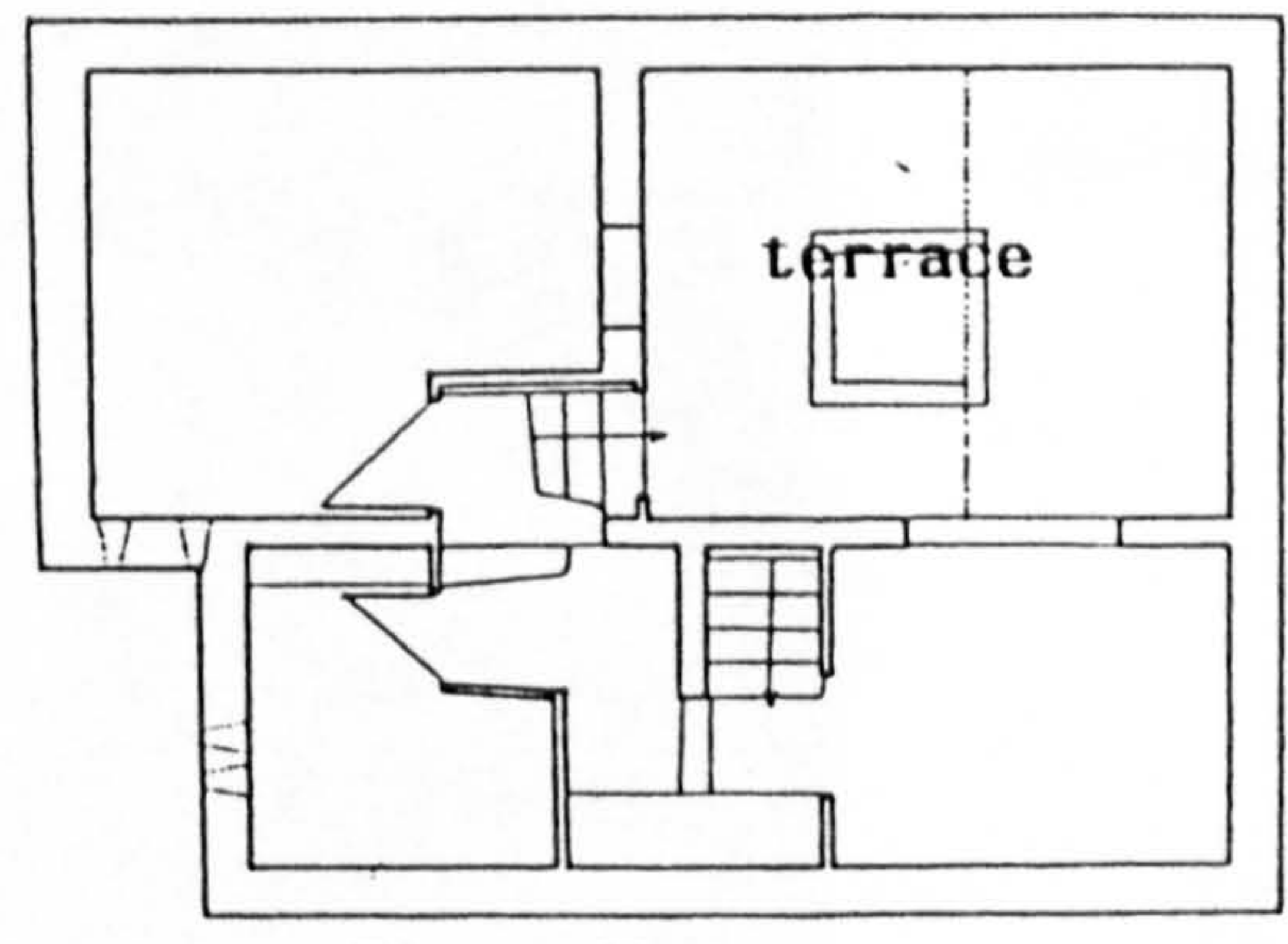
Fig(10.2): An example of high density courtyard housing
- Dwelling layout and sections -



Section over a group of houses

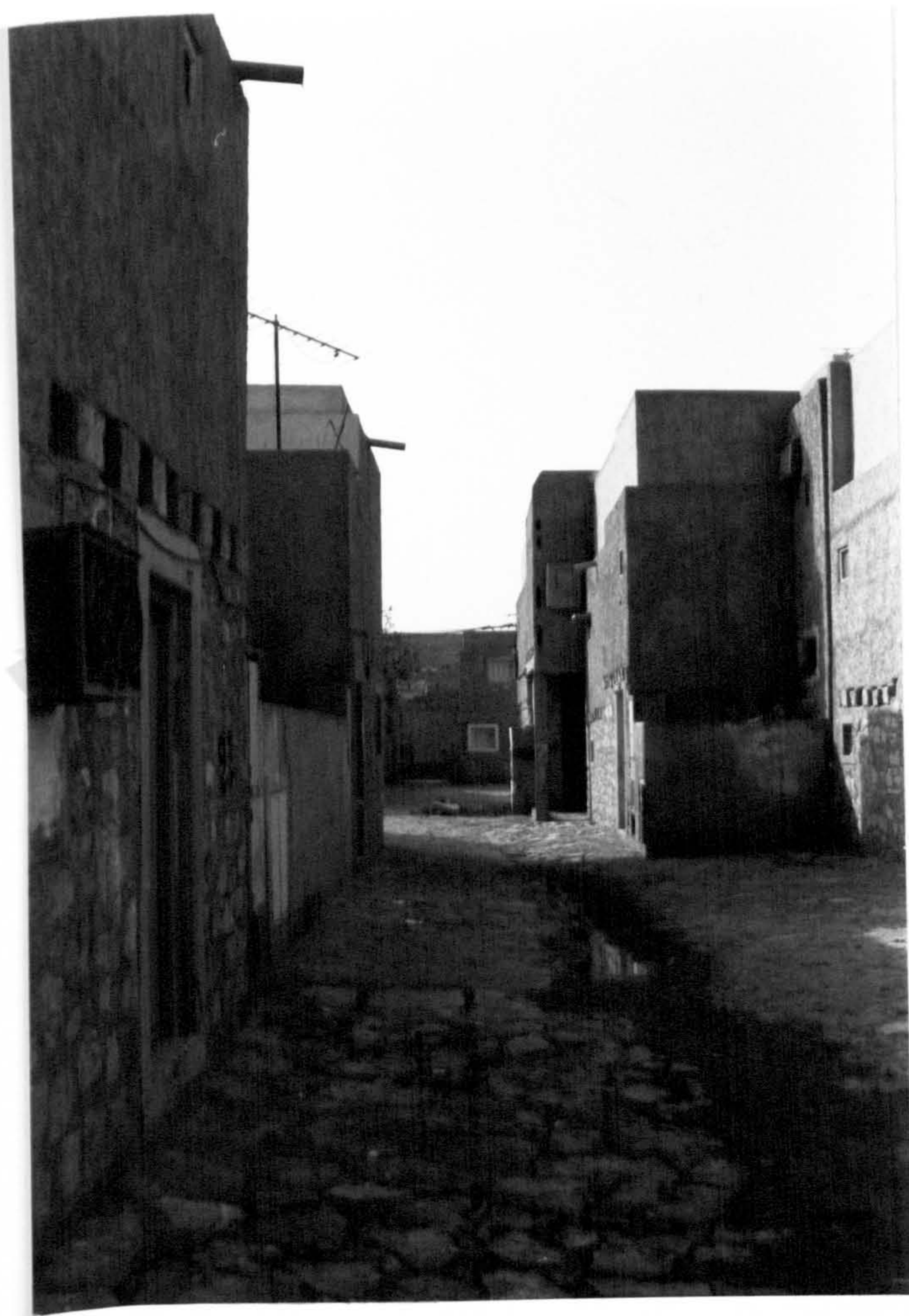


Ground floor

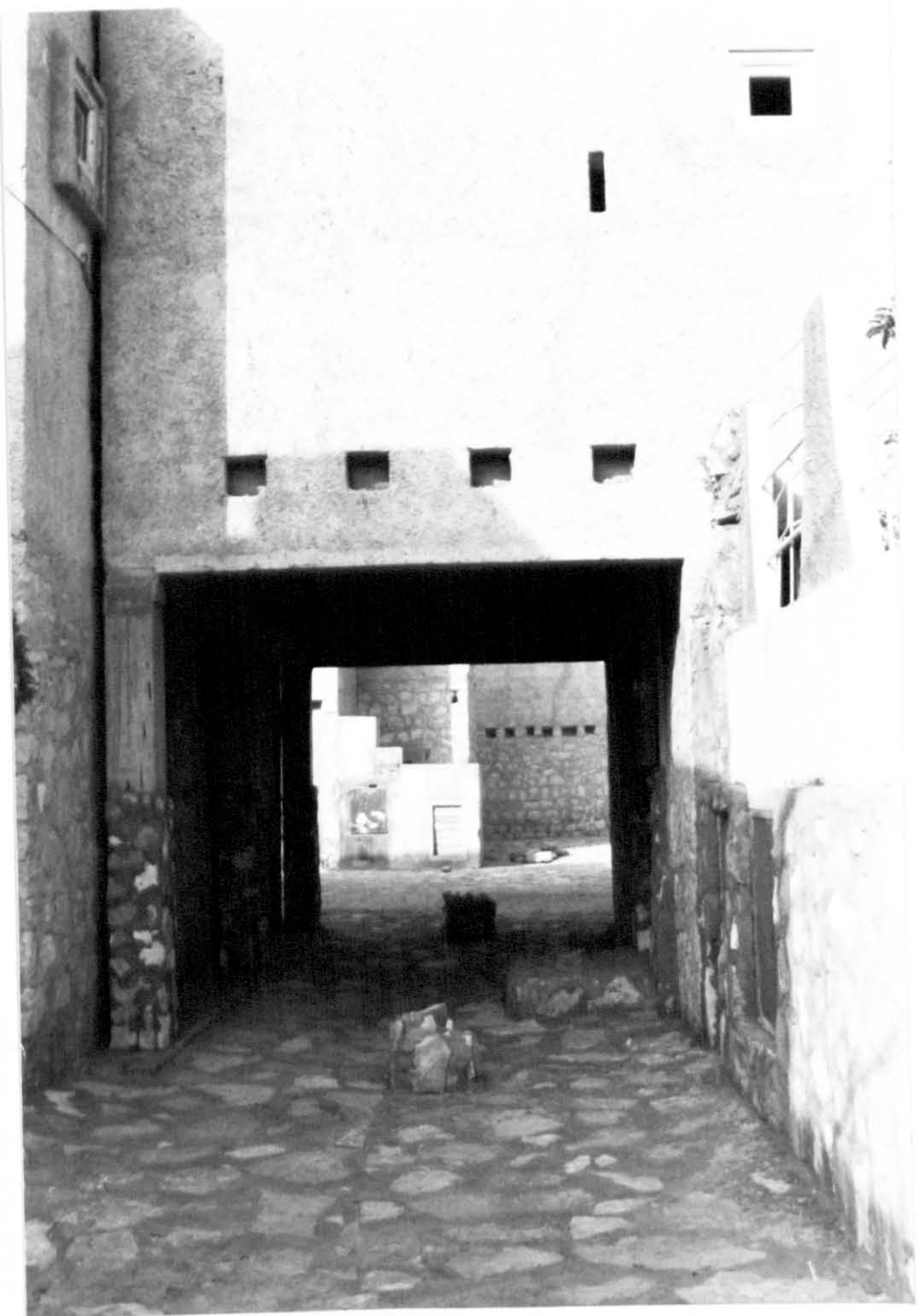


First floor

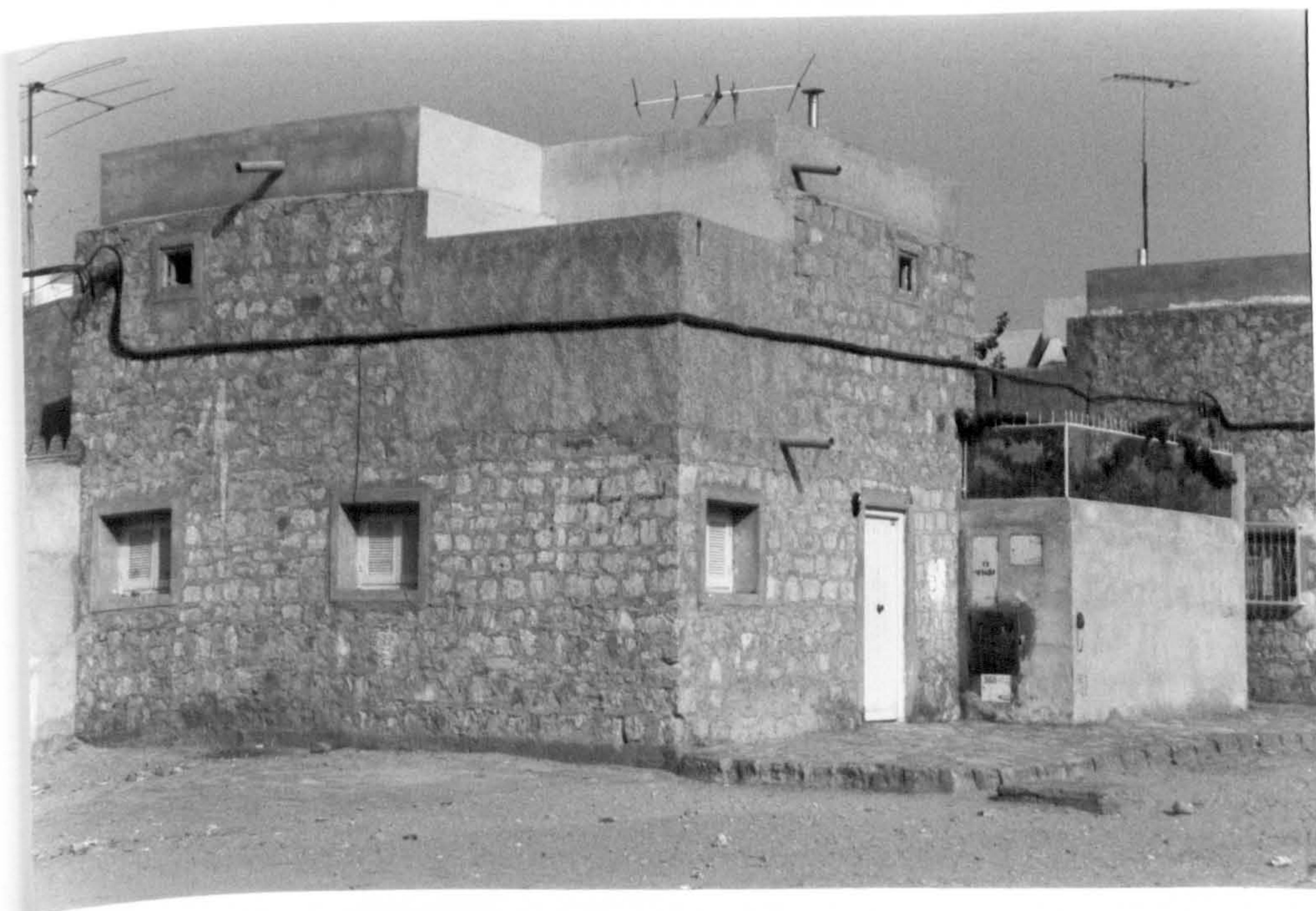
Fig(10.3): Different views of the area.



A street accessible to motor traffic.



Semi-covered street.



A dwelling

residential area, called the 'old Sidi Abbaz', has a density of 79 dwellings per hectare or 550 persons per hectare; much higher than those of the traditional and new settlements.

As far as costs are concerned, it has been demonstrated that the real costs of providing and maintaining dwellings rise with increasing storey height [11]. The additional costs rise mainly because of the costs of maintaining lifts and public spaces within and about the buildings [12]. Table (10.1) gives an idea about these costs, and suggests that total dwelling costs in high blocks are about half as much again as those in two-storey housing [13].

Table (10.1): Comparative inititial cost equivalents
in real terms of housing (10.000 bedspaces)
source: Stone, 1970, p.157.

	millions			
	Number of storeys			
	<u>2</u>	<u>4</u>	10	15
Dwelling (4 bedspaces)	5.47	6.42	8.47	8.95
Garage	0.50	0.75	0.75	0.75
Site development	0.81	0.58	0.46	0.43
Total initial costs	6.78	7.75	9.68	10.13
Maintenance and management costs	1.80	2.04	2.75	2.75
Total equivalent costs	8.58	9.79	12.43	12.88

* Prices at March 1964, England and Wales.

At the time of writing this thesis, there were no available studies comparing the costs of courtyard housing to other types of housing. However, many researchers who examined some of the factors

which affect dwelling costs, concluded that because the price of dwellings rises less than proportionately to increases in size, it was not very costly to increase the amount of floor area per dwelling (this explains, for example, why renting a five bedroom flat only costs about a quarter more than a three bedroom flat) [14]. The provision of extra floor space to accommodate a courtyard, would therefore not necessary lead to extravagant costs.

The previous section argued that high rise building was not that economical, as there was no gain as such from building higher. Furthermore, most spaces (usually blank areas of grass or tarmac) existing in high rise developments are hardly used by the residents. It is even worse in the case of societies where privacy and other traditional values as well as environmental conditions restrict the use of public open spaces. For these people, compound walls should maximise inner spaces, and therefore make full use of the total residential land.

The adoption of a courtyard housing type (i.e., a unit with an internal enclosed space open to the sky with habitable rooms and ancillary areas grouped around it, on two or three sides, and of one, two or three storeys) would release three sides of the compound wall, which could be used as 'common' or party walls. Hence, houses could be built contiguously, without the need for external walls except for the facade. This means a reduction of the size of the building plot, a higher density and an exploitation of the land to

its full potential, and therefore considerable economic advantages. Furthermore, since courtyard houses are built with party walls usually along three sides of their building plots, they constitute a 'multi-cellular structure' giving mutual lateral support and also economising on building materials and using simple building techniques and local labour.

Moreover, apart from providing absolute privacy for all family activities without being overlooked by neighbours or passers-by, the courtyard provides good noise insulation, and can act as a key for improving the environmental conditions [15].

Research so far undertaken has indicated that the traditional courtyard house produces better internal environmental conditions compared with modern houses. However, there is a controversy as to what causes this superiority. Some writers minimize the role of the courtyard, arguing that the superiority is due to the combination of many factors, such as traditional knowledge of house design and daily operation of windows, shutters and other devices [16].

A detailed analysis of the climatic performances of the courtyard is beyond the scope of this study, however, it is clear that systematic research and scientific measurements of the environmental performances of the courtyard in different circumstances is needed before one can talk about the considerable reduction of cooling cost (cooling load and the installation cost of mechanical air

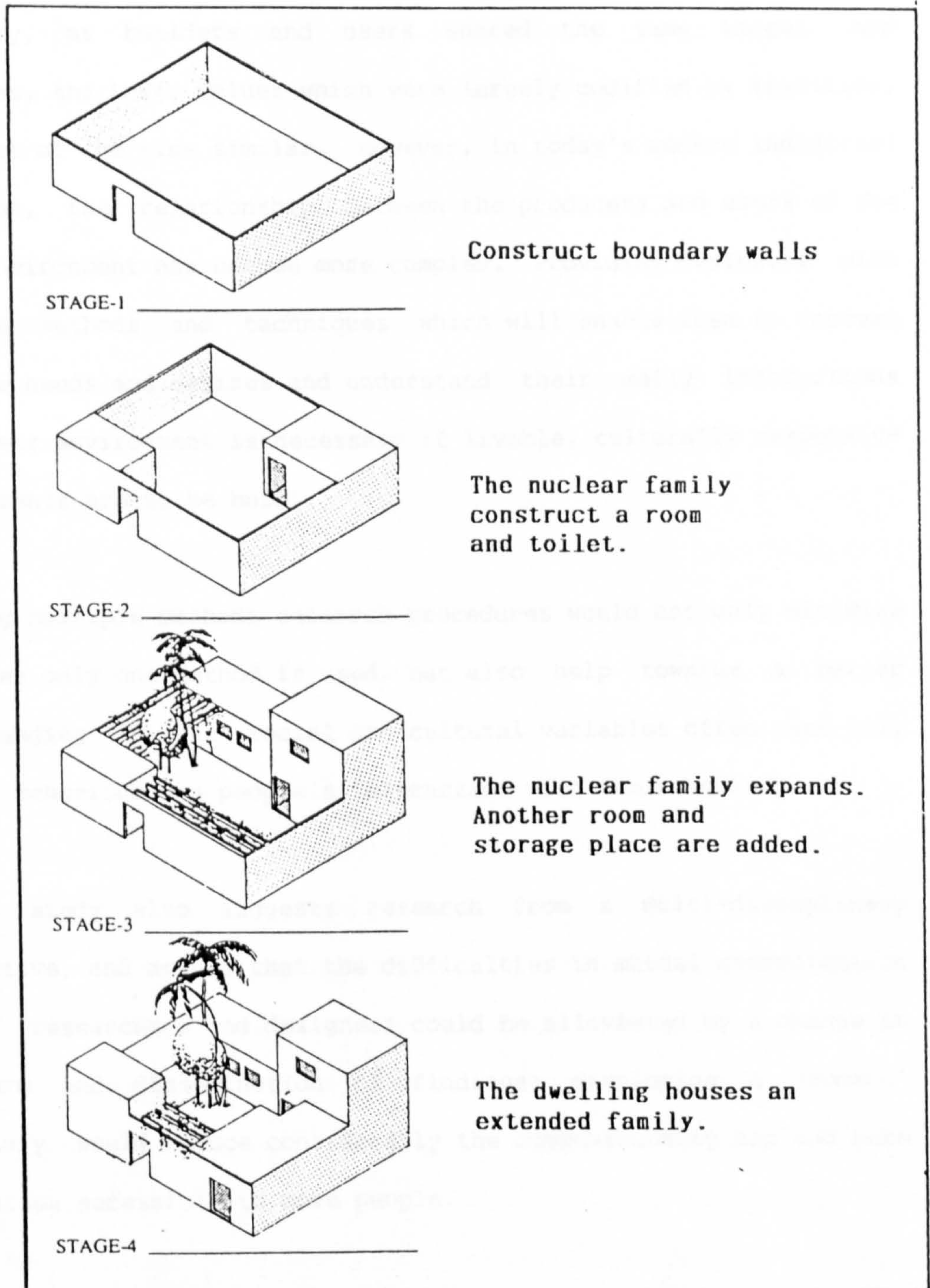
conditioning systems) a courtyard house would achieve.

An established feature of the courtyard housing type, is its ability to expand and accommodate the family's changes in structure, composition and fortune. Figure (10.4) shows that in the ultimate case, housing development schemes, could consist of houses built to 'stage 2' which will give the dwellers maximum freedom to allocate space within the compound, as well as the opportunity to progressively extend the dwelling until 'stage 4'. Vertical extension is also possible, although relatively limited by overlooking and privacy restrictions.

Therefore, before courtyards are abandoned as a design concept of the past, land consuming and too expensive, they should be appraised objectively. They can then be incorporated into the design of new housing types, taking into consideration the changing needs and new aspirations as well as the prevailing environmental and economic conditions.

Unfortunately, the desire to produce a culturally appropriate design is not always possible because of lack of information. Most information available concerns financial resources, material, prices and the size of the project. Data about the future dwellers, their lifestyle, needs and preferences is usually missing. When this information does exist it is often available in a form that is not readily useable by the designer [17]. This study suggests a

Fig(10.4): Evolution of the courtyard house



framework for a sound knowledge base which would enrich the designer's understanding of man-environment interaction and uncover the needs and desires of potential users. In the past this was not necessary, as builders and users shared the same images and schematas, and their values which were largely codified by tradition, were most of the time similar. However, in today's modern industrial societies, the relationship between the producers and users of the built environment has become more complex. Providing designers with adequate methods and techniques which will enable them to uncover people's needs and desires and understand their daily interactions with their environment is necessary if livable, culturally responsive environments are to be built.

Using multiple methods research procedures would not only minimize bias when only one method is used, but also help towards a better understanding of the social and cultural variables often seen only through behaviour and people's interaction with their environment.

This study also suggests research from a multi-disciplinary perspective, and argues that the difficulties in mutual communication between researchers and designers could be alleviated by a change in the form and dissemination of findings; developing a 'common' vocabulary would reduce considerably the communicability gap and make information accessible to more people.

The second suggestion is for a 're-orientation' of the educational system, where the interconnection between social research and design is most of the time overlooked, and a reinterpretation of social research and design practice. Preparing students for future interdisciplinary collaboration is not only desirable but a necessity if the potential of multi-disciplinary work is to be fully exploited.

Moreover, the concept of public participation is still not well established in Algerian planning and design. Inculcating in students from the very beginning the need for communication and work 'with' instead of 'for' potential clients and users is very important if dismantling academic and professional barriers between diverse groups of people who study, design, manage and use the built environment is to be successful.

Nevertheless, as in many cases designers do not always have the benefit of actual users to work with (these might be unknown, and the only information might consist of general characteristics such as income and family sizes), students should be well familiarized with evaluation research methods and concepts of flexibility, adaptability and open-endedness. In effect one way to resolve, or at least partially solve the problem of the needs of 'unknown users' is:

1. To locate, study and evaluate settings, users, and problems representative of future ones. Identify the tendencies for change as well as the commonly held values. By answering questions such as:

- a. What were the designers' original intentions and how did they implement them?
- b. How have users personalised, modified and used the different places?
- c. What in the design influenced the use of the setting in ways the designers did not intend?

Evaluation research results can be used to reorganise priorities and improve designers control over the effects of future design decisions, as well as test theories and assumptions on which design decisions may be based. Students should be encouraged to use evaluation as a continuous, ongoing process, itself using multiple-methods research. A 'repertoire' of actual users, their appropriation and use of places, their criticisms, the success as well as failure of existing schemes would not only help the student to tackle the problems of 'unknown users' more efficiently, but also teach him/her to be more autocritic and therefore more objective.

2. To design for potential adaptability. A resurgence of traditional flexibility and open-endedness would provide users with more control over their surroundings by enabling them to adapt the structure themselves, reflect their culture, and therefore, regain the freedom of action, involvement, active creative adaption and modification, that the traditional design process was giving them. It would also allow personalisation, and could help to regenerate the self-confidence, feeling of responsibility that most people lost when 'mass design' took

over. This, however, does not mean the abolishment of all forms of development control. What is argued is that control at the dwelling level is not necessary, especially when people are already bound to Islamic Law and building guidelines, like in the case of the M'zab.

Finally, comparing old and new forms of housing, and identifying the tendencies for change can yield much useful information for the designer. Such an inventory could not only allow the designer to identify persistent and thus potential fixed or relatively inflexible elements in the flexible structure, but would also highlight any new introduced elements, and therefore assist him/her to reach an authentic synthesis between old and new and translate it into new indigenous designs.

NOTES AND REFERENCES

1. Many examples could be drawn from India, Nigeria and other countries where there are different religions, tribes, etc.
2. See for example, Abrams, C., "Man's struggle for shelter in an urbanizing world". Cambridge, MIT Press, 1964.
3. Rapoport, A. . "House form and culture". Englewood Cliffs, Prentice Hall, 1969. And also King, A. (ed). "Buildings and society: essays on the social development of the built environment". Routhledge and Keegan Paul, London, 1980.
4. The failure of Chandigarh and other Modern Designs is well documented in Brolin, B. "The failure of Modern Architecture". New York, Van Nostrand, 1976.
5. Ibid.
6. Ibid.
7. Kainer, R., cited by Wenger, P., 'Mixed living and working spaces as open structures', in "Proceedings of IYSH- International conference on housing planning and design". Vol II. Nanjing institute of technology, PR China, 1987. pp.3-55.
8. Dunleavy, P. "The politics of Mass Housing in Britain 1945-1975". Clarendon Press, Oxford, 1981. pp.84-93, and passim. See also Martin, L., and March, L. "Urban space and structures". Cambridge University Press, 1972. Part one.
9. Danby, M. . 'The internal environmental aspects of the traditional Arab house and their relevance to modern housing'. In Hyland, A., and Al-Shahi, A. "The Arab house". Proceedings of the colloquium held in the university of Newcastle upon Tyne 15/16 March 1984. p.83-90. See also Al-Azzawi, S., 'The courtyards of oriental houses in Baghdad: non functional aspects'. in Hyland, A., and Al-Shahi, A. op.cit. pp.53-60.
10. Ravereau, A., "Apprendre la tradition". In technique et architecture, no.345. December 1982- January 1983. pp.75-76
11. Stone, P. "Urban development in Britain: standards, costs and resources, 1964-2004". Vol.I: Population trends and housing. Cambridge university Pr Press, Cambridge, 1970. p.157, and chap 7 and 9. Dunleavy, P. op.cit. p.84-89.
12. Coleman, A., "Utopia on trial, vision and reality in planned housing", Hilary Shipman, London, 1985. pp.168-169 and passim.

13. Stone,P. op.cit. chap 9.

14. Ibid.

15. Noor,M. , "An analytical Study of traditional Arab domestic architecture". Ph.D thesis. University of Newcastle upon Tyne, 1979.

Abdin,A. ' A bio-climatic approach to house design for semi-desert and hot climates'. Ph.D thesis. University of Strathclyde, UK, cited by Danby,M . 1984. op.cit.

16. Danby,M.. 1984. op.cit.

17. In a survey aimed at discovering the degree of familiarity with, and use of findings of environment-behaviour research on the part of practicing design professionals, Reizenstein (1975), found that the main reason for lack of use of findings was that research was not usually translated into helpful information for decision making. By this is meant that findings are usually presented in an academic style unsuited to design and planning decision making, or that, it may have too much 'social jargon' for designers to understand. For more details about the survey's findings see Reizenstein,J. "Linking social research and design". Journal of Architectural research. 4/3 December,1975. pp.26-36.

EPILOGUE

Varied cultural landscapes, life-styles, languages are usually highly appreciated. As they not only make the world richer, more complex and interesting, but they also offer wider choice. Furthermore, by analogy to ecology, it could be in fact argued that a diversity of groups and species leads to stability. A preservation of cultural diversity seems then quite desirable. However, culture having a dynamic and active character, conquests, trades, mass media, all had and are having a strong effect on culture. The process of acculturation is now even more accelerated by the sophistication of communication systems. Culture change is particularly rapid in the less developed countries where cultural traditions are often seen negatively and accused of impeding progress. At the same time, in some places where cultural change has been drastic, many people are desperately trying to recover their 'roots' and some sort of cultural identity.

So, what is the position of the designer in all that. Should he design 'culture supportive' environments just because cultures should survive? Or should he yield to the argument that since culture changes continually, and people are adaptive they would adapt to any 'universally designed' environment? This argument was explicitly rejected by this study, as experimental evidence (although limited to

a specific group of people) has shown that adaptation was not always possible, and this could cause stress.

Successive chapters of this study have highlighted the necessity to integrate social and cultural variables in the design process. Considering the dynamic character of these variables designing for potential adaptability was the main characteristic of the approach advocated. A flexible, evolutive housing environment would not only be supportive of the existing 'contextual' conditions but would also help modulate rates of change and give more opportunities for personalisation.

Furthermore, however fast the rate of acculturation could be, the prospect of having 'one single homogenized' culture is perhaps more difficult to achieve now than it was in the past. Indeed, if in the past destroying a collective memory of a culture was quite easily achieved by just destroying its setting (remember the now quite popular case of the Bororo culture described by Levi-Straus in 1955)[1], this is very unlikely to happen today. Modern forces such as the World bank and other organisations, as well as modern super-power politics in general may well be instruments for mass destruction of culture. In the meantime, symbolic information is now stored in many different ways and places; in books, photographs, films, computers, and other sophisticated devices which are now accessible to an increasing proportion of people, who for nostalgic, romantic, ecologic, fundamentalistic and many other reasons are more

than ever concerned about their cultural environments. Some of them engaged in preservation and conservation, others in the search for 'roots', and many others yet undecided are still researching this very complicated phenomenon [2]. The position here, is that neither outright conservationism nor radical modernism can succeed. What is needed is an authentic synthesis between ever take is that old and new carefully translated into a new indigenous way of living.

NOTES AND REFERENCES

1. Levi-Strauss, C. "Tristes tropiques." Paris: librairie Plon, 1955.
2. Many examples could be cited here: Fathy, H (1973) and a whole new movement of Muslims fundamentalists would represent the conservatives; Gropius, W., the Bauhaus, Le Corbusier and their followers, the Modernists.

APPENDIX ONE

PHYSICAL AND SOCIAL GEOGRAPHY OF ALGERIA

A1.1 INTRODUCTION

Algeria is at the same time a Mediterranean and African country (plate A1.1). It is the largest of the three countries in north-west Africa that constitute the Maghreb, as the region of mountains, valleys and plateaux that lies between the Mediterranean sea and the Sahara desert is known. It has a coastline of about 1,000 km and a total area of 2,381,741 sq km, over three-quarters of which is desert.

The arabic name for the country, El-Djazair, which literally means the islands is said to derive from the rocky islands along the coastline which have been well known for the danger they constituted to ships approaching the harbours.

The 1987 census totalled the population of the country at 22,971, 558 [1] , and almost all the inhabitants are Muslim. The official language is Arabic, however, most educated Algerians speak French. The Berber, a dialect of the original tribes of the Maghreb, is also spoken by some people, such as the Kabyles, the Chaouia, the Mozabites and the Touaregs.

Plate (A1.1): Situation of Algeria



For administrative purposes the country is divided into 48 'wilaya' (counties).

A1.2 POPULATION

It is characterised by an annual growth of 3.28% which is among the highest in the world [2]. According to UN estimates the birth rate was 45.1 per 1,000 between 1980 and 1985 [3]. In the first national census, in 1966 the population including Algerian abroad was estimated at 12,090,547 out of which 4,500,000 were urban [4]. The latter figure having been swollen by the huge migration to the cities that took place after independence.

Whithin 20 years the total population has nearly doubled reaching 22,971,558 [5]. About 56% of the population still live in rural areas, however about 100,000 peasants a year migrate to the towns in search of work [6]. According to UN estimates the population of urban centres was growing at 6.7% annually in the period of 1960-70 but this rate has been slightly reduced to 5.1% in 1980-85 [7].

The age bracket of under 20 years constitutes almost half the population. The total population of working age is even more sharply reduced by the high number of non -employed females.

Most of the population tends to concentrate in the northern parts of the country where the large cities accommodate 38% of the total

population, the mountains 25% and the rich plains 17% (plate A1.2). The urban growth is also another sign of the continual unbalanced distribution of the population. Algiers grows at the rate of 8% per year, Annaba and Constantine at 6%, Oran at 5% and the medium cities at 4.5% [8].

A2.3 PHYSICAL AND CLIMATIC CHARACTERISTICS

The main contrast in the physical geography of Algeria is between the relatively high mountains of the north and the flat desert of the south. In fact, Algeria is divided into four physical parts. These are the Tellien Atlas, the high plateau or high plains, the Saharan Atlas and the desert. For these reasons Algeria is divided into zones of rainfall and temperatures roughly corresponding to the relief's division (plate A1.3):

- Mild and mediterranean in the north, and Tellien Atlas. These regions are characterized with warm, wet winters and hot dry summers. Complete drought lasts for three to four months during the summer. It is during this time, that the notorious sirocco occurs. This is a scorching, dry and dusty southerly wind blowing from the Sahara. It usually blows for 40 or more days a year over the high plateaux and 20 or less days nearer the coast. When it sets in, shade temperatures often rise to over 40°C.
- Along the northern margin of the High plateaux, mediterranean conditions give way to a semi-arid or steppe climate. In these regions rainfall is reduced and tends to occur in spring and

Plate (A1.2): Distribution of population, mode of living, transportation and agriculture



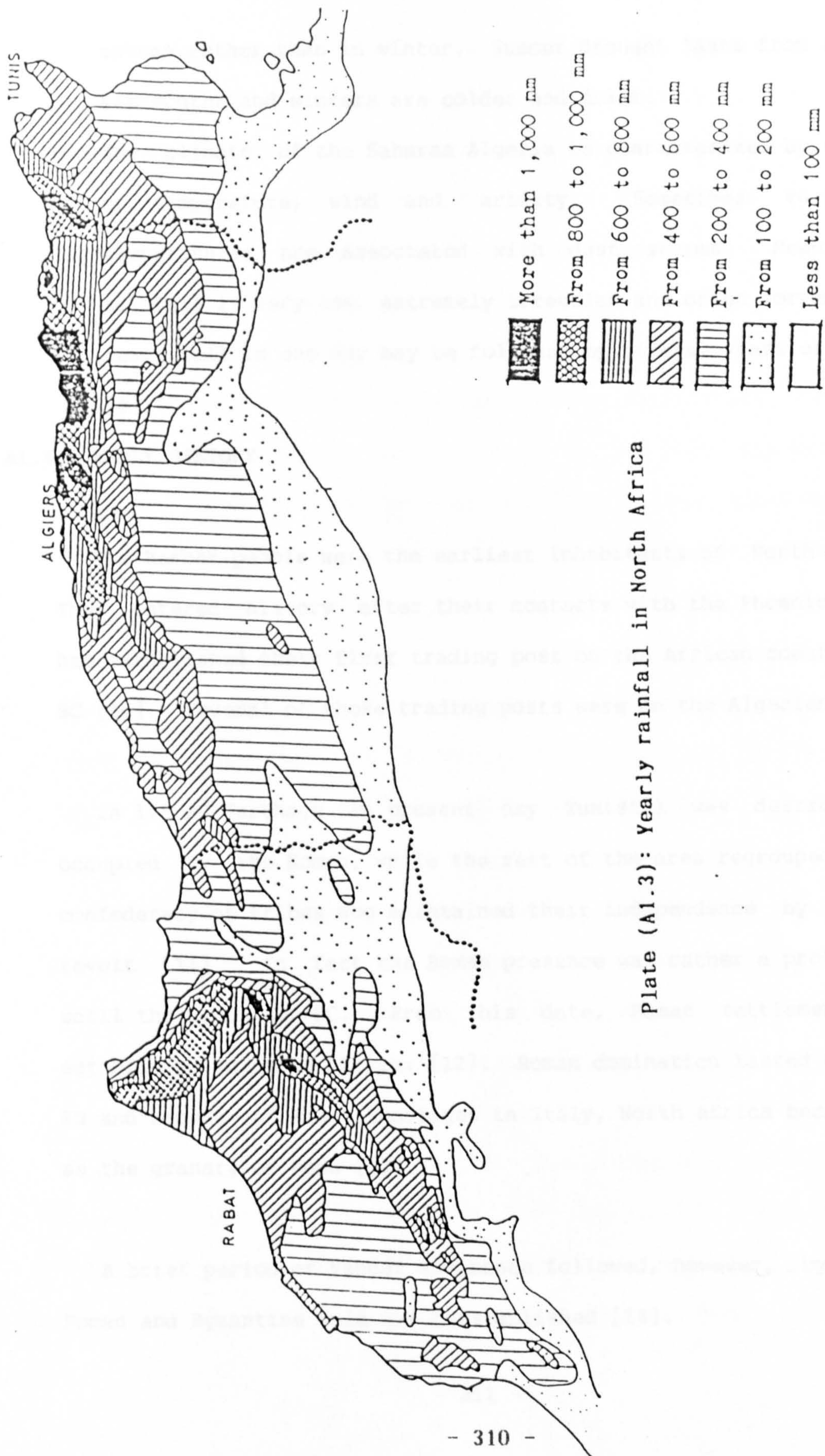


Plate (A1.3): Yearly rainfall in North Africa

autumn rather than in winter. Summer drought lasts from five to six months and winters are colder and drier.

- The climate of the Saharan Algeria is characterized by extremes of temperature, wind and aridity. Sometimes very high temperatures are associated with dust storms. Mean average rainfall is very low, extremely irregular and often torrential; a heavy fall in one day may be followed by several years of drought [9].

A1.4 EARLY HISTORY

The Berber people were the earliest inhabitants of North Africa. They entered history after their contacts with the Phoeniciens who had established their first trading post on the African coast in 1200 BC [10]. Several of these trading posts were on the Algerian coast.

In 148 BC Carthage (in present day Tunisia) was destroyed and occupied by the Roman, while the rest of the area regrouped a loose confederacy of tribes who maintained their independence by frequent revolt [11]. In fact the Roman presence was rather a protectorate until the year 42 BC. From this date, Roman settlements were established in North Africa. [12]. Roman domination lasted until 429 AD and because of wheat shortages in Italy, North Africa became known as the granary of Rome [13].

A brief period of Vandal dominance followed, however, by 533 AD Roman and Byzantine rule was reestablished [14].

The Arabic penetration of North Africa commenced in 641 AD, following the rise of Islam in Arabia [15]. In 670 AD, they founded Qairawan (in present day Tunisia) as their main base, however, the other towns remained under Byzantine control until 702 AD [16]. The increasing Arab immigration finally put an end to the Berber and Byzantine resistance.

In 740 AD, a religious opponent group (Kharidjites) appeared in the country and became a serious threat to the Arab supremacy then represented by the Ummayad Empire [17]. Taking advantage of the opposition between the Abbassides and the Ummayads in Baghdad, an independent kingdom was created in Tunis (744-755) and led to the creation of a larger Berber Kharidjite Kingdom in the eastern part of north Africa. The latest Kharedjites reign of Tahert in Algeria, was defeated in 911 AD and the surviving disciples fled to the desert where they built the famous cities of the M'Zab [18].

Between the 9th and the 11th centuries, the Berbers adopted the Islamic religion, laws and language. Two important Berber kingdoms succeeded one another during that period. The first was established by Muslim converted Berbers coming from the western Sahara and covered the whole of Morocco, a large part of Algeria and Spain. This was the Almoravide empire. The second one, Almohade empire, germinated inside a small sedentary group in the high Atlas (Morocco), overthrew the existing Almoravide power (1147) and covered the whole of North-Africa and Muslim Spain [19]. The Amohades

unified the whole Maghreb and Muslim Spain, bringing economic prosperity to the region. By 1250, however, the area was again in a condition of instability, and was divided into three parts- the Abdel-Wadid dynasty in the central part of Algeria, the Hafcides in Tunisia and eastern Algeria, and the Merinides in Morocco. These dynasties survived until the end of the 15th century.

When King Ferdinand of Spain carried its crusade against Muslim power to North Africa , in the late 15th century [20], the then fragmented political state of the area offered little resistance and sought the assistance of the Turkish corsair Aruj, who later took over Algiers and several other towns and proclaimed himself Sultan. In 1518 he was succeeded by his brother Barbarossa, who placed his territories under the protection of the Ottoman Sultan [21]. This act may be said to mark the emergence of Algeria as a political entity.

The central power was in Algiers and the country was divided into four administrative regions. The first Algiers and its hinterland, was under the Dey's direct authority. The three others, the central, western and eastern beyliks were ruled by designated Beys. The southern and mountainous regions were relatively little concerned with Turkish occupation. From the mid-16th century, however, real power in Algiers was in the hands of the janissary corps and the guild of corsaire captains. The regency of Algiers reached its peak in the 17th century, the profitable trade of piracy bringing great

wealth. After the Napoleonic wars, however, it became obvious that one of the European powers would take advantage of the growing anti-slavery movement in Europe and land forces in Algeria [22].

A1.5 THE FRENCH CONQUEST

The excuse for intervention was the famous 'coup d'eventail', an insult by the Dey to the French consul in 1827 [23]; the real cause was the need of the then chief minister, Polignac to secure some credits for his administration in the eyes of the French public. On 5 July 1827 Algiers fell to a French expedition. The conquest of Algeria was hard and long because of fierce Islamic opposition [24].

After 1870, the first French settlements took place dismanteling the whole existing agricultural organisation, and a civil administration with the status of a French 'departement' was set up for much of Algeria. Indeed, unlike Tunisia and Morocco, which were protectorates administered by the French foreign office, Algeria was an integral part of France administered by the Ministry of Interior, and sent representatives to the French parliament [25]. The gradual settlement of colonists accelerated after 1870, the date of the crisis in the wine industry in southern France. Meanwhile, a policy of colonisation, with widespread confiscation of land and its transference to settlers groups, had been pushed forward. Another feature of this period was the growth of large-scale agricultural and industrial enterprises, which concentrated more power in the hands of

the most powerful members of the settler groups. The production of wine for export replaced the traditional production of cereals for home consumption [26].

By 1900 the Muslim population of Algeria had been reduced from relative prosperity to economic, social and cultural inferiority. About three million inhabitants had died, and the tribal system broken up. The settlers, however, experienced a high level of prosperity and economic progress. New roads and railways were set up to link the major cities of the north or to drain the products to the ports. However, the flagrant injustice and the opposition of cultures led to a growing nationalist discontent [27].

In 1924, a group of Algerian students in France founded the first Algerian nationalist newspaper, in collaboration with the French communist party. In 1933 they organized a congress on the future of Algeria and called for total independence [28].

More moderate doctrines were put forward by an influential body of French-educated Muslims, formalised in 1930 as the Federation of Muslim Councillors. This group called for integration with France on a basis of complete equality. The Blum-Violet Plan, which would have granted full rights of citizenship to the Algerian Muslims, was dropped by the French government in the face of fierce opposition by the French settlers and the Algerian civil service [29].

1936 saw the formation of another party, the 'PPA', Party of the Algerian people. The outbreak of war in 1939 temporarily reduced the nationalist's activities, but the Allied landings in North Africa in 1942 provided an opportunity for the Algerian nationalists to put forwards to the French authorities and the Allied military command a memorandum calling for the post war establishment of an Algerian constituent assembly, to be elected by universal suffrage. These demands to which the French Government remained unresponsive, were followed by the 'Manifesto of the Algerian People', which called for immediate reforms including the introduction of the Arabic language as an official language [30].

Following a visit by the then president of France, General de Gaule, a new statute for Algeria was put in effect in March 1944. It was a compromise which satisfied neither the Algerian nationalists nor the French settlers. The Algerian share of the seats in the 'communes mixtes' was still restricted to 40 per cent. This led to the foundation of the 'AML', (the Friends of the Manifesto of Freedom), and the call for the foundation of an autonomous Algerian Republic federally linked to France [31].

The strong repression of the Setif riots in May 1945, where 15,000 Algerians were killed, led many nationalist leaders to consider force as the only means of realising their objective [32]. Nevertheless, attempts to reach a compromise solution continued for some time. In March 1946 the UDMA (Democratic Union of the Algerian Manifesto) was

launched calling for an autonomous, secular state within the French Union. Despite its successes in elections to the French Assembly, the UDMA failed to achieve any of its objectives, and withdrew from the assembly in september 1946 [33].

In an attempt to compromise the French Government introduced a new constitution which became law on 20 Septembre 1947. It gave French citizenship, and thus the right to vote to all Algerians including women, and recognized Arabic as equal in status to French. However, some of the ameliorative provisions of the 1947 Constitution were never implemented. The aim was mainly to destroy opposition to French rule; the result was to drive the main forces of nationalim underground [34].

The final plans for the insurrection were worked out at a series of CRUA (Revolutionary Council for Unity and Action) in Switzerland in October 1954. Algeria was divided into six 'Wilaya' (administrative departments) and a military commander was appointed for each. The Algerian armed revolt was launched on 1 November 1954 and the CRUA changed its name to the FLN (National Liberation Front), its armed forces being known as the 'ALN' (National liberation Army). By 1956 the ALN was active throughout all the settled areas of Algeria [35].

The first exploratory talks between French and FNL delegates took place in secret near Paris in the summer of 1960 but were

unsuccessful. In November of the same year, De Gaulle announced the organisation of a referendum on the Algerian problem. In the referendum the electorate were asked to approve a draft law proposing self-determination and immediate reforms to give Algerians the right to participate in Government. However, mass absentions from voting, forced the French to make new approaches to the FLN, in February 1961, through the President of Tunisia. These were followed by direct negotiations between French and the FLN representatives at Evian, on the Franco-Swiss border. However, the death of the Mayor of Evian, killed by members of the 'OAS' (Secret Army Organisation) which was set up by the French settlers to resist any negotiated settlement interrupted the negotiations [36].

Secret contacts were re-established in October 1961, and the final stage of the negotiations was concluded at Evian with the signing of a cease-fire agreement and a declaration of the future policy. This latter provide for the establishment of an independent state after a transitional period, the safeguard of the French settlers' rights, and future Franco-Algerian cooperation. The final steps towards Algerian independence were now on the way. On 1 July 1962, 91% of the electorate voted for independence, which was declared on 3 July 1962 [37].

A1.6 THE INDEPENDENT STATE

On 25 Septembre 1962, the Algerian Republic was proclaimed, and the following day Ben-Bella was elected president [38]. The economic situation of the country was very bad. Almost all the French settlers, representing virtually all the technicians, teachers, doctors and other skilled workers had left the country. Factories, farms, and shops had closed, leaving most of the population unemployed. Public buildings and records had been destroyed by the 'OAS'. About 1.5 million people had been killed, 2 million had been in internment camps and 500,000 refugees in Tunisia and Morocco [39].

In December 1962 an emergency austerity plan was drawn up, and the Government was enabled to function by large loans and foreign assistance. The system of workers' management known as 'autogestion' under which the workers elected their own management board to work alongside a state appointed director, became the basis of the 'Algerian Socialism' [40].

However, in the face of Algeria's poor economic situation and Ben-Bella's dictatorial tendencies, Colonel Houari Boumedienne took over and Ben-Bella was deposed in a swift and bloodless 'coup d'etat' in June 1965 [41].

The aims of the new regime as described by Boumedienne were to create an authentic socialist society based on a sound economy. In

1966, new agreements with France were signed which provided for French technical and educational assistance for a period of 20 years, cancelled Algeria's pre-independence debts and reduced indebtedness to France to 400 millions dinars. France was unhappy with the growing Soviet influence in Algeria. Indeed, soviet assistance was playing a leading role in the development of mining and industry, and the Algerian army was receiving training and equipment from the USSR. Therefore, in spite of the independence, French cultural influence remained and became even stronger. French was still the main language although the teaching of Arabic was introduced to schools. Large numbers of French teachers and other technical assistants were continually arriving in Algeria and an equally important number of Algerian immigrants continued to work in France [42].

In 1971, Boumedienne's Government felt strong enough to initiate a more active social policy. In February he announced the take over of 51% holding in the French oil companies in Algeria, and nationalized the companies' gas and pipeline interests [43].

In April 1976, a new constitution 'El-Meethak-el-Watani' (the National Charter) received the approval of 98.5% of the voters in a referendum in June [44]. The essence of the Charter was the irreversible commitment of Algeria to Socialism, but as a concession to more conservative sentiments Islam was recognised as the state religion.

After Boumedienne's death on 27 December 1978, colonel Chadli Bendjedid was inaugurated as president and declared that he would continue to uphold the policies of Boumedienne. However, in June 1979 constitutional changes made the appointment of a prime Minister obligatory, and reduced the president's term of office from six to five years, in line with five yearly party congresses.

In 1979, the Government encountered criticisms from students who went on strike protesting that the policy of replacing French with Arabic was not being carried out quickly enough. In May 1980, the FLN central committee announced that a central co-ordinating body was to be set up to encourage the use of Arabic. A year later many settlements and streets' names were changed to Arabic.

In December 1979, the FLN central committee admitted the country's failure to implement a coherent national economic policy. It announced that Algeria would reduce its dependence on foreign financial and technical assistance, diversify its economic partners, and cut down its petroleum and gas exports in order to preserve its resources. The emphasis of government policy was to shift from heavy industry to social areas, such as health, education, and infrastructure and raising agricultural production. The private sector was to be considerably liberalized.

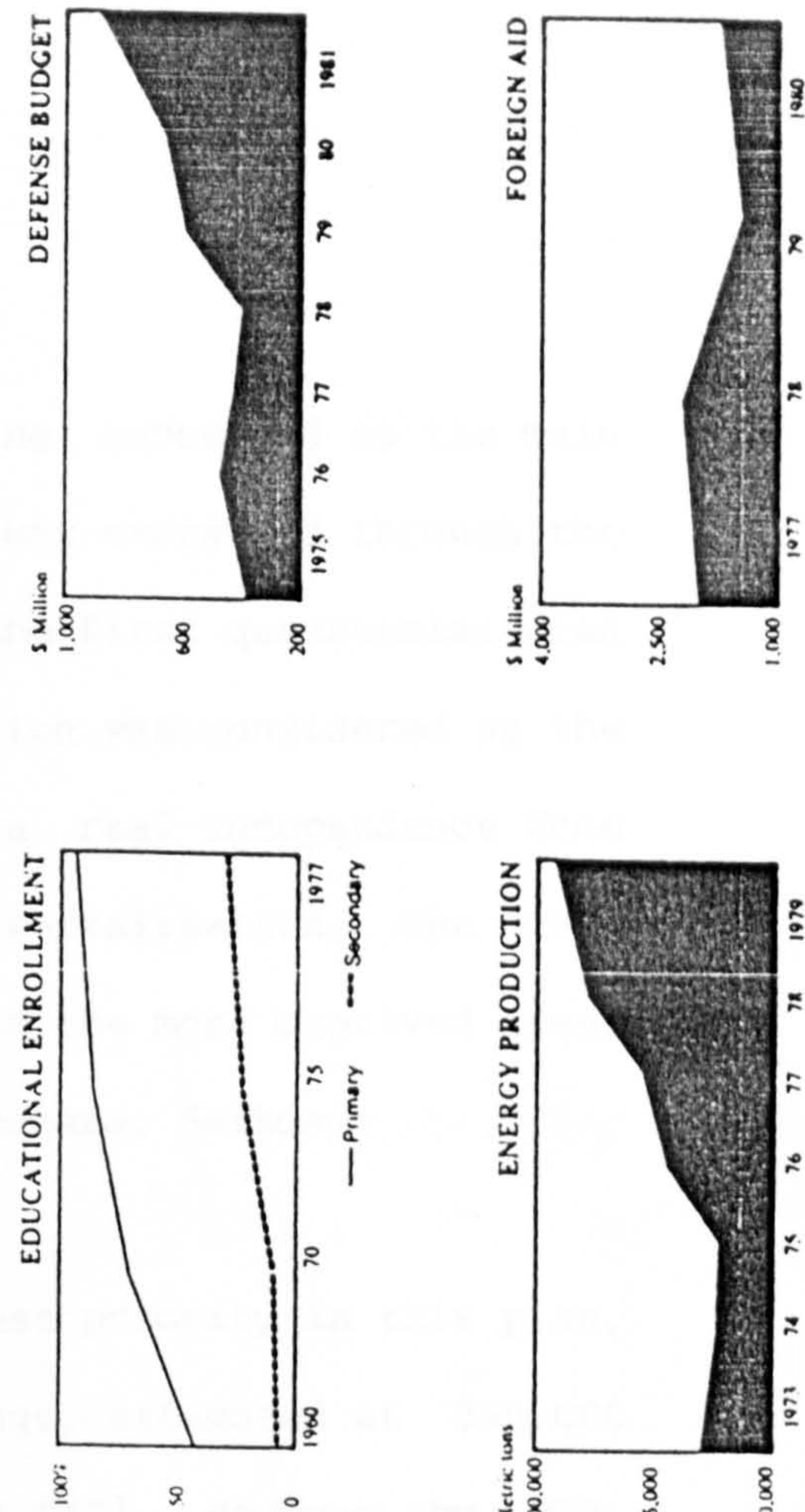
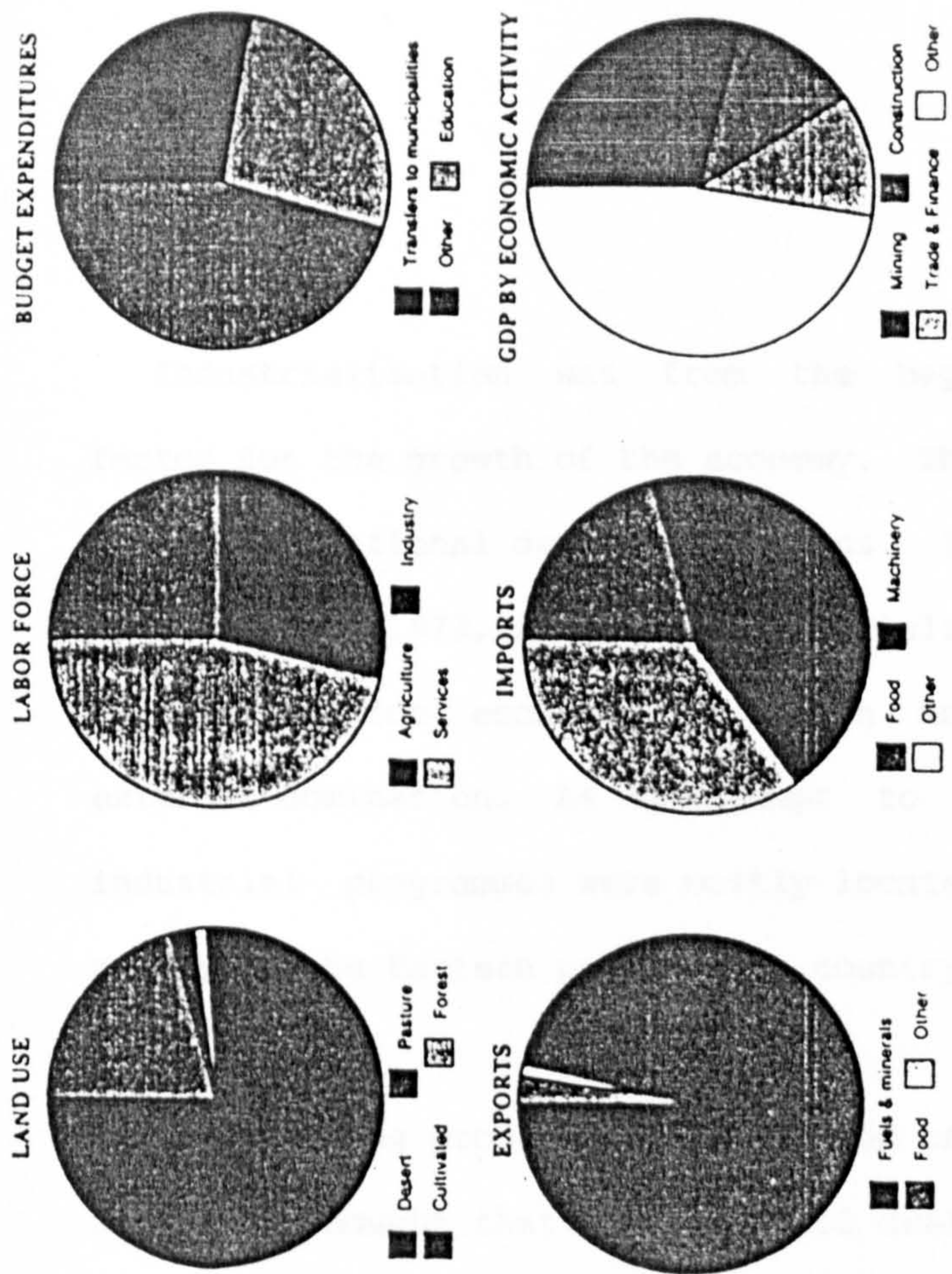
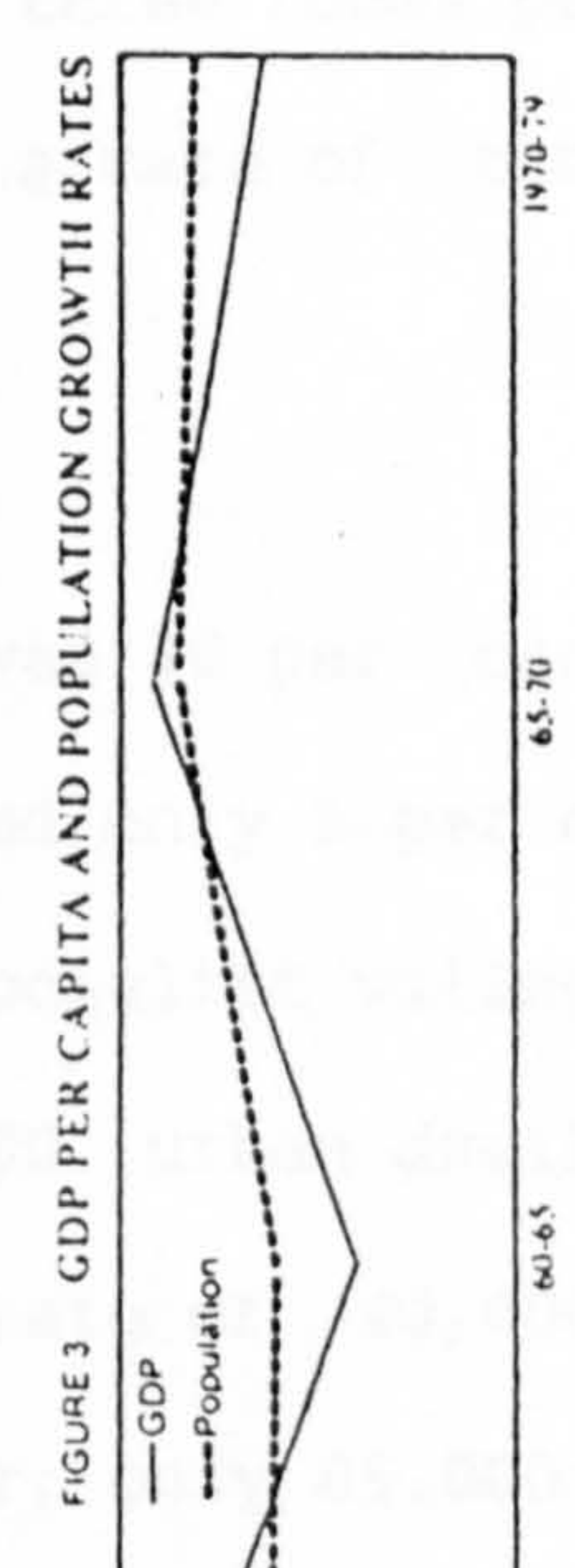
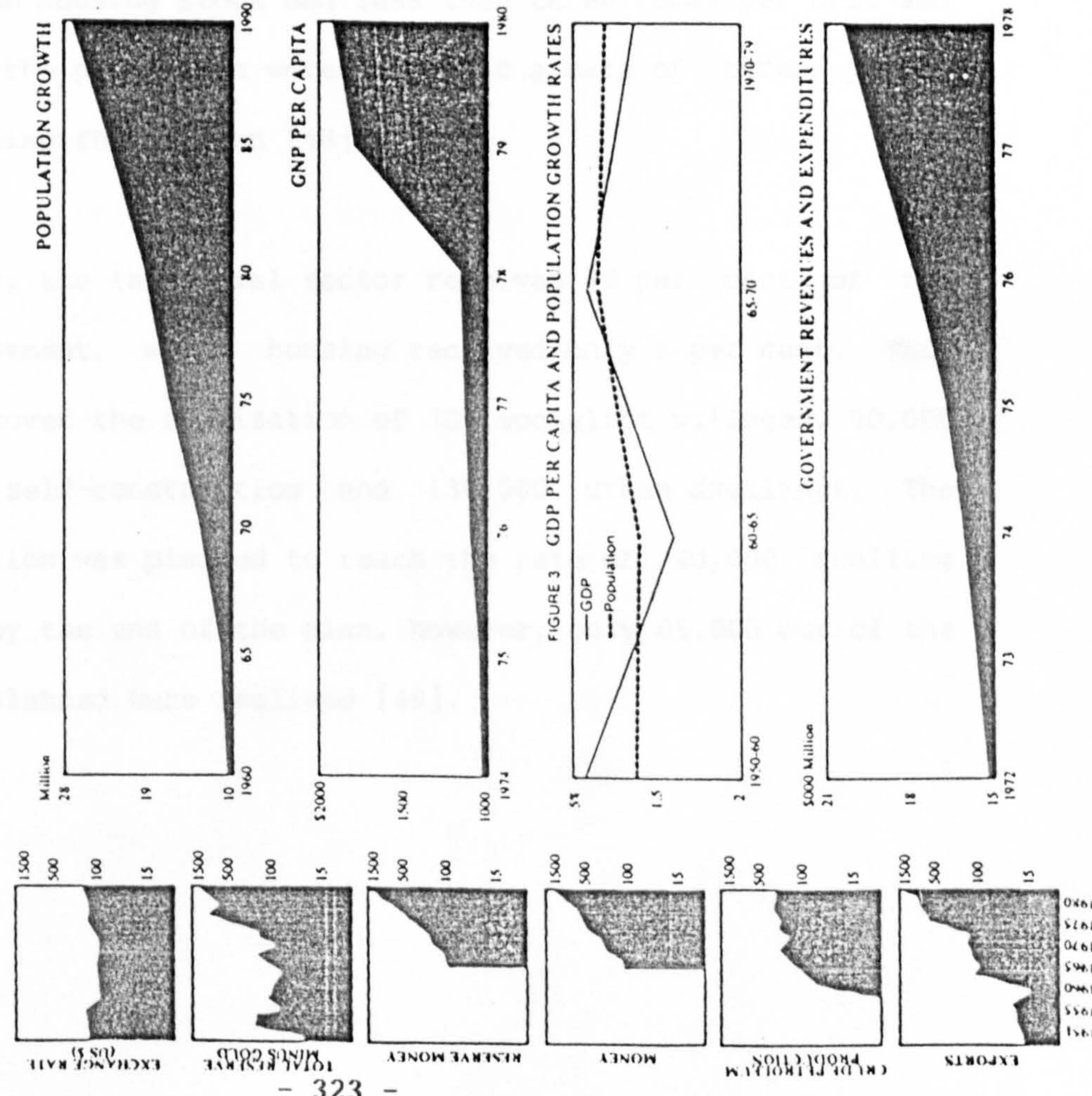
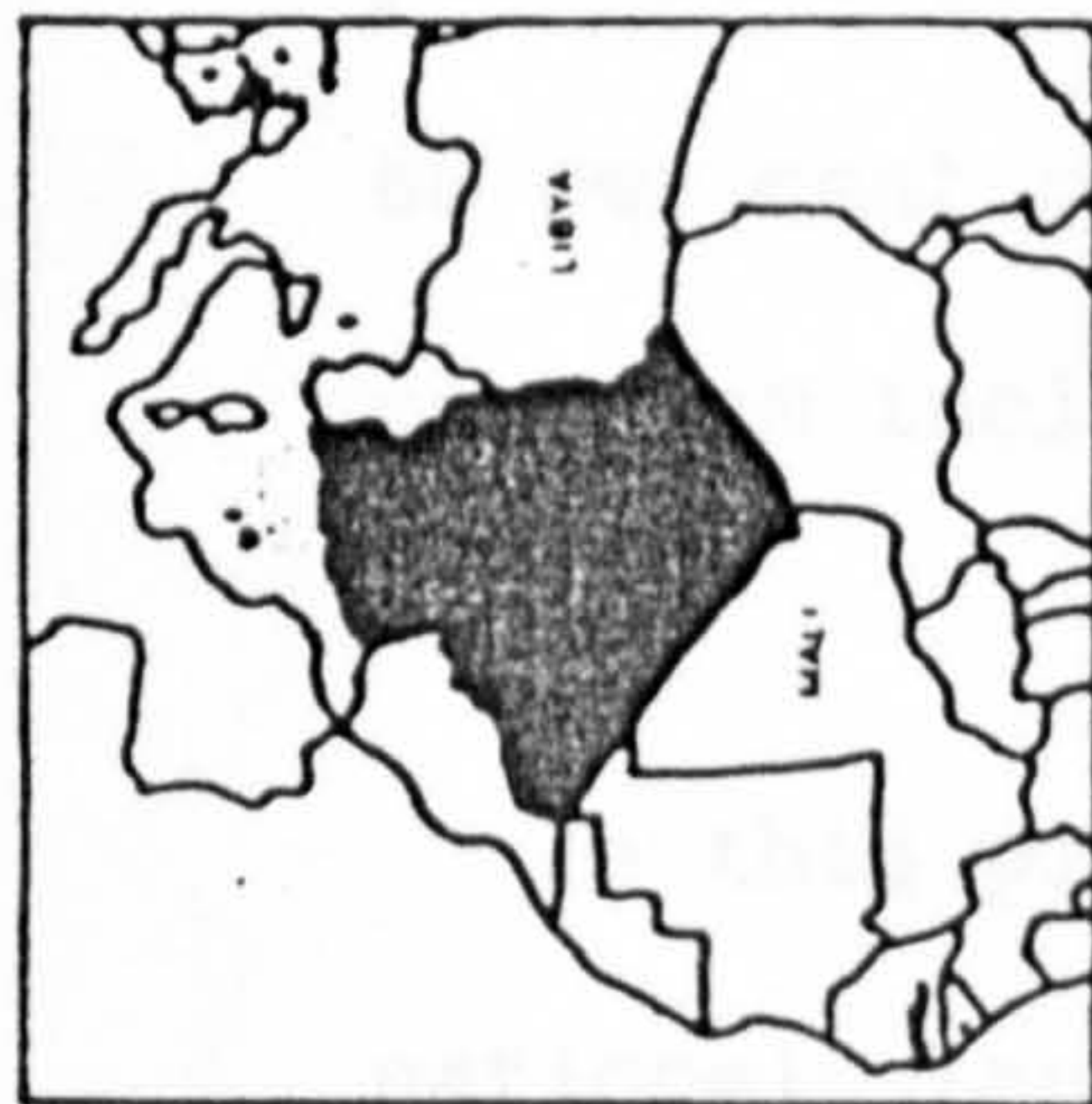
On 12 January 1984, Chadli was re-elected president and returned to office for another five years. In February 1985, he initiated a

public debate on the National Charter which had been introduced by Boumedienne, as the basis for Algerian socialism, in 1976. And in December 1985 a new Charter was adopted. It shifted away from the doctrinary socialism of Boumedienne, encouraged the private sector and proposed a balance between socialism and Islam as the State ideology. The next general elections are due late in this year (December 1988).

A1.7 ECONOMY

Algeria has varied natural resources. The northern coastal strip is used for arable farming and profitable returns are made from cereals, olives and especially wine which represents more than 60% of total agricultural exports (plate A1.4). Dates are grown in the oases of the Sahara however 80% are locally consumed. Mineral resources are abundant and are the main component of Algeria's foreign trade. Even before the petroleum era, Algeria has mined and exported high-grade iron ore, phosphates, lead, zinc and antimony [45]. After independence the government nationalised all foreign-owned mines and insurance companies as well as the hydrocarbon sector. Heavy industries are all State-run, while the consumer orientated light industries have an important private sector participation. About half of these are in the textiles and leather sectors. Since 1981, more than 90 of Algeria's giant State corporations have been split up into some 300 more specialised units [46].

Plate (A1.4)
The Algerian economic activity in graphs.



Industrialisation was from the beginning conceived as the main factor for the growth of the economy. This was expressed through the different national development plans. In the first quadrennial plan covering 1970-1973, intensive industrialisation was considered as the key factor for economic expansion and a real independence from external domination. As an attempt to decentralisation, the main industrial programmes were mostly located in the more deprived areas namely in the Eastern part of the country (Annaba, Skikda).

The housing problem was considered of less priority in this plan, as it was thought that the amount of dwellings, estimated at 350,000 left by the French would meet urban growth [47]. However, by 1973, it was clear that this latter had been under-estimated. Indeed 85 per cent of the housing stock had less than three rooms per unit and 60 per cent of the population were living at a rate of three people per room including the kitchen [48].

In this plan, the industrial sector received 40 per cent of the national investment, while housing received only 5 per cent. This budget was to cover the realisation of 300 socialist villages, 50,000 dwellings by self-construction and 130,000 urban dwellings. The housing production was planned to reach the rate of 40,000 dwelling units a year by the end of the plan, however, only 85,000 out of the 130,000 units planned were realised [49].

As far as agriculture is concerned, ambitious objectives consisting mainly of the reconversion of crops and irrigation were fixed in this first plan. This vast program of agricultural replanning was followed by 'the Agrarian Revolution'. This was to consist of two stages, one taking place in the second plan and the other in the third plan. The first 'phase' consisted mainly of the redistribution of public agricultural lands among the most deprived peasants; the second nationalised large parts of private properties and divided them into small co-operatives. The main aim of this Agrarian Revolution was to stop rural migration by the creation of 1,000 'Socialist villages', each of them catering for a minimum population of 5,000. Today, only some 200 villages have been finished and most of them are questionable in many ways [50].

The second Plan, 1974-1977, aimed at creating a sound industrial base and emphasized improved agricultural methods, housing, and health. However, there was a marked lack of effective government policy with regard to agriculture and housing. Industry was allocated 43.5% of total investment, social services and housing 13.3% and agriculture 10.9% [51]. Out of the 400,000 dwelling units programmed in the plan only 162,143 were achieved [52]. Shortages of materials of construction were among the causes for failure [53]. It was during this plan, and in support for a better relationship between cities and countryside, that the district plan was introduced in 1974. The long term aim of the district plan was to improve the small towns in order to relieve the large cities.

The second Plan was followed by three years of debate caused on one hand by the death of President Boumedienne in December 1978, and on the other hand by the need to evaluate achievements at the end of the second plan.

The 1980-84, first Quinquennial Plan, was characterised by the emphasis given to meeting social needs, such as housing, health and education. Industry, however, remained the basis of the Government's long-term strategy, although there was a marked shift from heavy to light industry. This plan was also characterized by a new policy of encouragement for the private sector [54].

The current 1985-1989 Development Plan reflects the Government's new priorities for development, shifting investment from industry to agriculture and irrigation projects. Furthermore, about 30% of the total investment is allocated to social infrastructure, with projects for the development of housing, education, health and transport. More than one half of the credits in the new Plan, were allocated to finishing existing projects and to compensate for the shortcomings of previous plans.

A new bank, the 'BADR' or Banque d'Agriculture et Development Rural (Agriculture and rural development bank) was set up in 1982, to help in improving the output of farms, whether State-owned or private. During the period of 1985-89 development Plan the government aim to develop non-hydrocarbon exports, particularly

agricultural produce, minerals and other manufactured goods which in 1984 accounted only for 2% of the exports [57]. However, the decrease of Government income mostly due to the slump in oil prices, has made it quite unlikely that the objectives of the 1985-1989 Plan will be achieved.

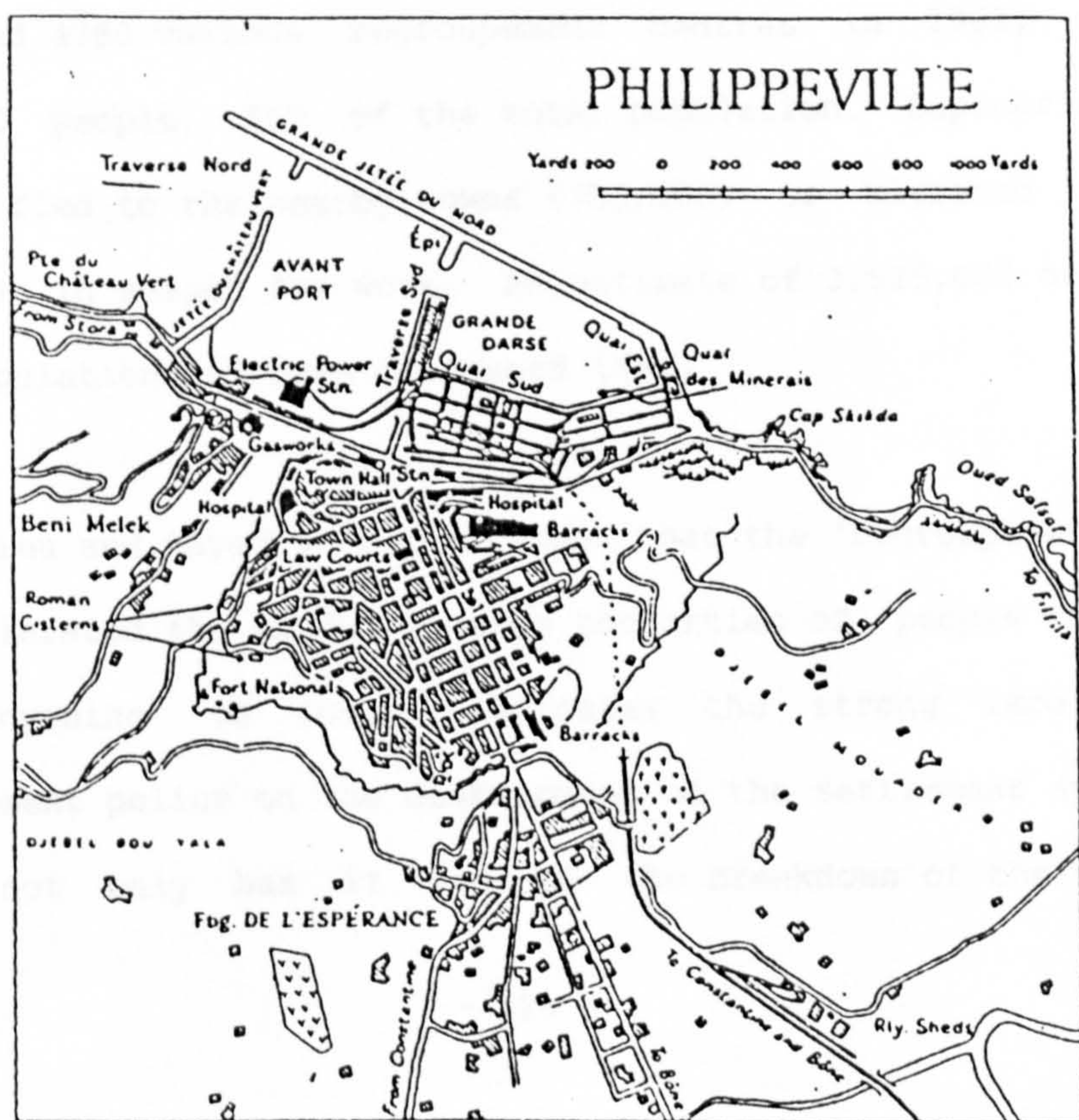
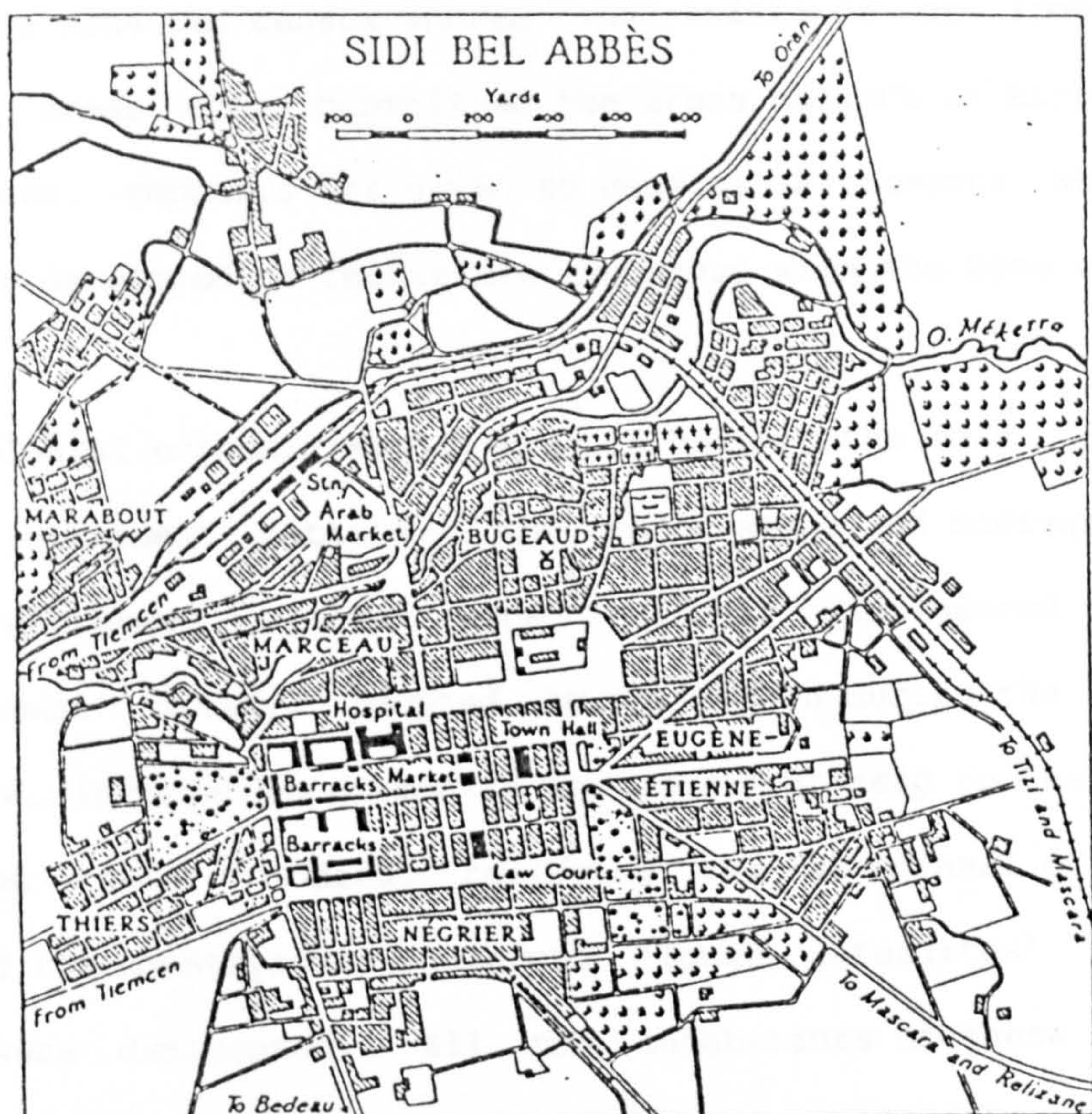
A1.8 THE SETTLEMENT SYSTEM

Algerian pre-independent urban history has developed through a variety of settlement systems: Berber, Roman, Byzantine, Arab-Islamic, Turkish and French. However, it is during the French colonisation that the settlement system evolved more quickly and distinctly with regard to its size, function, and organisation. Therefore, an overview of the French colonial legacy is of importance as it would allow a better understanding of the basis on which Today's Algeria has been built.

A1.8.1 Transformation of the settlement system

The network of towns built by the French was quite extensive and covered large parts of the country. They also initiated the establishment of many new settlements such as Skikda (ex-Philipville) in 1938, Sidi-Bel-Abbes in 1843 and Setif in 1848 (fig A1.1) and later some colonisation villages and garrison stations in the interior developed as small towns [56].

Fig(A1.1) : Example of towns built by the French
(source: Naval intelligence, 1942)



The 1966 Algerian census showed the existence of some hundred built up areas which constituted the urban network of Algeria after independence. Emphasis was given to coastal settlements where many ports were developed to facilitate exchanges with the home country.

The colonial economic system was not however the sole determinant of the settlement pattern. The rural areas and consequently the whole settlement system were strongly influenced by the 'regroupement' policy, adopted by the French during the liberation war period, in order to dismantle any source of help to the National Liberation Front. Indeed, following the withdrawal of the 'FLN' forces to the countryside, numerous 'Zones interdites' (forbidden zones) were designated. All the inhabitants of these zones were expelled and their settlements burnt. Between 1954-62, about 8000 villages and hamlets were destroyed [57]. Cornaton's empirical study identified 4760 various regroupement centres in 1961, containing 2,350,000 people, 26% of the total population. Expropriated, many peasants fled to the nearby towns (700,000) or migrated to France (350,000) in search for work. An estimate of 3,525,000 of Algeria's rural population has been displaced [59].

Bourdieu and Sayad's [60] argument that the 'regroupement' centres had accelerated the exodus towards the cities of 'people who did not have anything to loose' indicates the strong impact of the regroupement policy on the development of the settlement system. In effect not only has it led to the breakdown of the traditional

socio-cultural system of peasantry but created a new type of peasant, 'un paysan deracine, depaysanne et urbanise', and subsequently only 250,000 people, under 10% of the regrouped population moved back after independence [61].

Al.8.2 The Colonial urbanisation process

During the first ten years of occupation, military requirements took first place in the existing urban structure. Many houses and mosques were converted into military bases, barracks and tribunals. The winding and narrow existing urban patterns became a nuisance for the army movement and several streets were widened and remodelled.

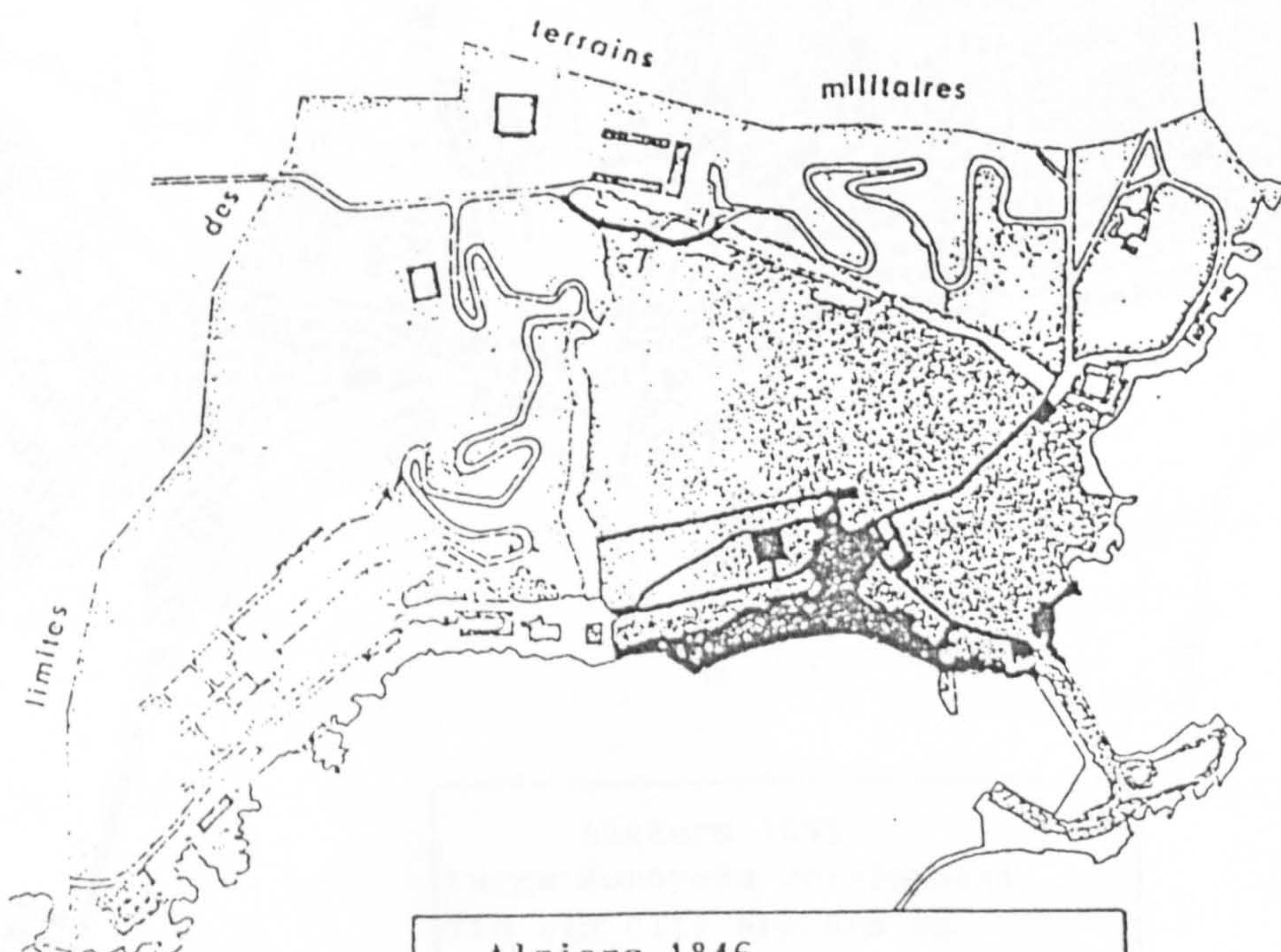
During 1840-1870, the French decision of total conquest became an incentive for the creation of European settlements. Algiers in particular had to assert itself as the capital of an important French colony. The creation of the boulevard 'Front de mer' in 1860, for the first visit of Napoleon III to Algiers, was the most significant work of the period. Despite its extent and technical qualities, it was only a facade of prestige hiding the uncontrolled development of the city (fig Al.2 and Al.3). Indeed, the first legislation which universally and expressly dealt with the provision of town plans in Algeria did not appear until 1919 [62]. And the first 'plan d'urbanisme' to be developed was that of Algiers presented just on time to celebrate the first centenary of French Algeria. Many plans were presented on that occasion, three of them by Le Corbusier.

Fig(A1.2)



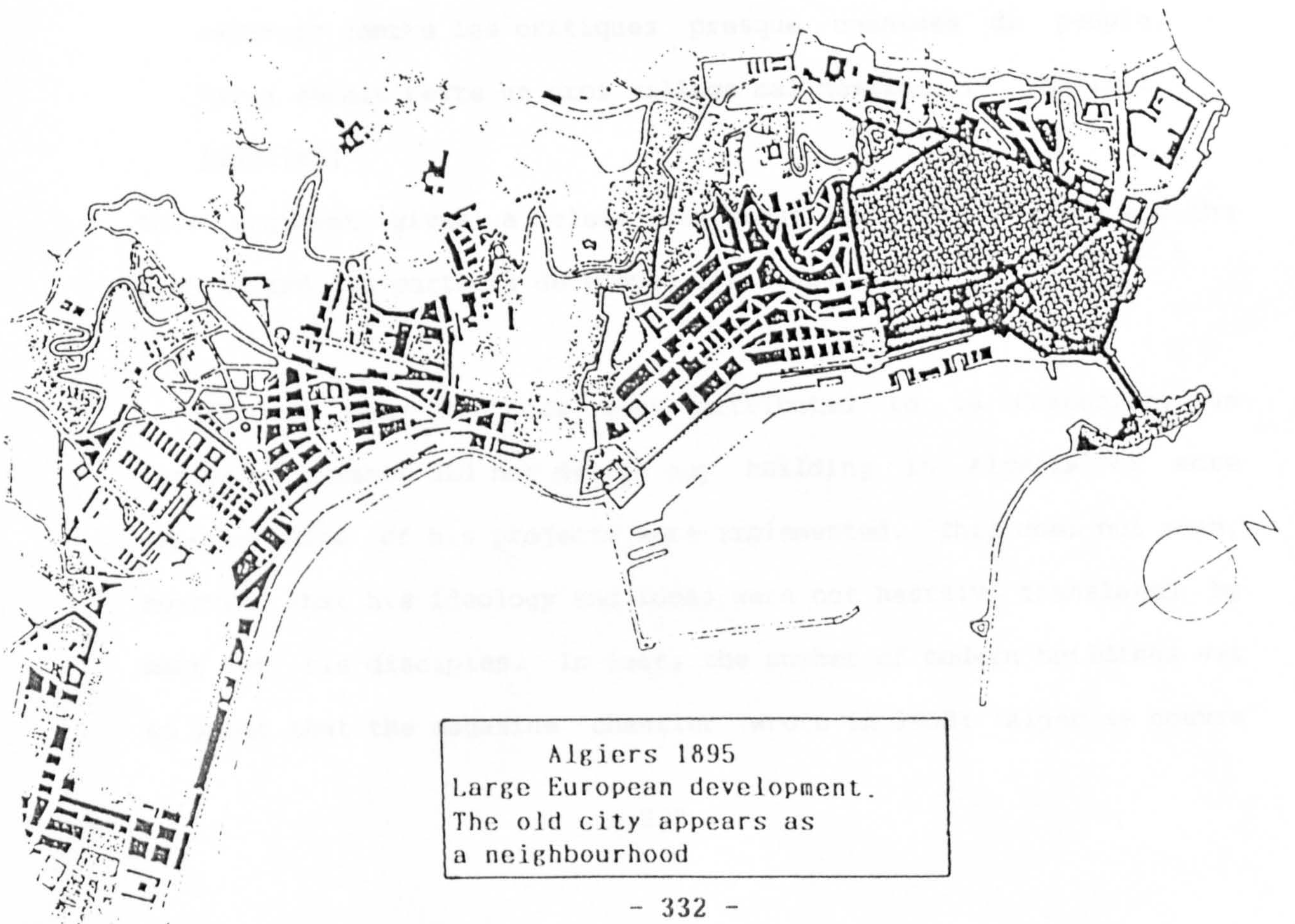
Algiers 1833

First French transportation



Algiers 1846
Concentration of restructuring
in the lower part

Fig(A1.3)



However, the Danger-Prost-Rotival Plan approved in 1931 was to become the first 'plan d'urbanisme d'Alger'[63].

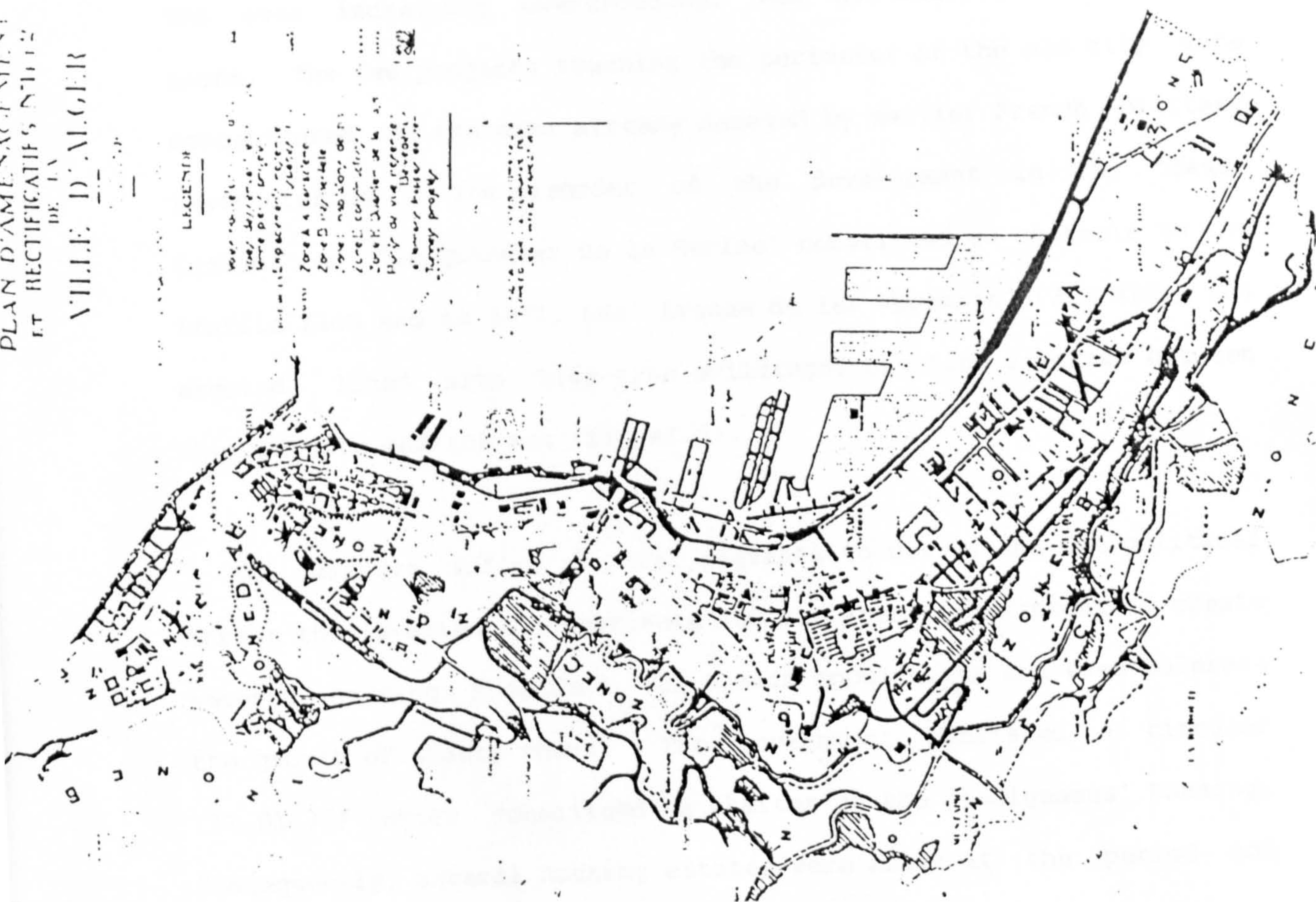
In this plan Algiers was to be extended and linked to its surrounding communes (El-Biar, les Tagarins) by two main boulevards (boulevard Galieni et Frantz Fanon). The plan itself was characterized by a segregation of the different functions. Figure (Al.4) shows that 'zone A' was to be occupied by commerce, 'zone B' by residences, 'zone C' by luxury residences and hotels, and 'zone D' by the industry. The main idea of Rotival was to create 'un Alger monumental'. In the 1933 congres of Architecture held at Algiers he is reported to have showed his strong beliefs in Haussman's ideology and argued [64]:

'...Si Haussman n'avait pas ete soutenu par la dictature d'un empereur contre les critiques presque unanimes du peuple, Paris serait reste un gros village mal dessine...' (Rotival, 1933)[65]

This argument gives a clear idea about Rotival's ideology and the plan he and his partners developed for Algiers.

Although many projects were attributed to Le Corbusier, Le Corbusier himself did not design any building in Algeria or more exactly none of his projects were implemented. This does not mean, however, that his ideology and ideas were not hastily translated by many of his disciples. In fact, the number of modern buildings was so great that the magazine 'chantier' wrote in 1952: 'Alger se couvre

4157



- 334 -

d'une parure d'immeubles modernes'. The same year, Gasagne [66], then Mayor of Algiers claimed that France by its genius transformed the barbarian city to a big and modern city:

'La France par son genie createur, a transforme la cite barbaresque en la belle et grande ville moderne que vous avez pu admirer et qui s'etend sur 1400 hectares et peulee de pres de 500,000 habitants.... Nous sommes loin des palais et des habitations qui ne prennent jour que par des cours interieures, loin des ruelles etroites dont vous avez pu constater l'existence dans la Casbah.' (Gasagne, 1933)[67].

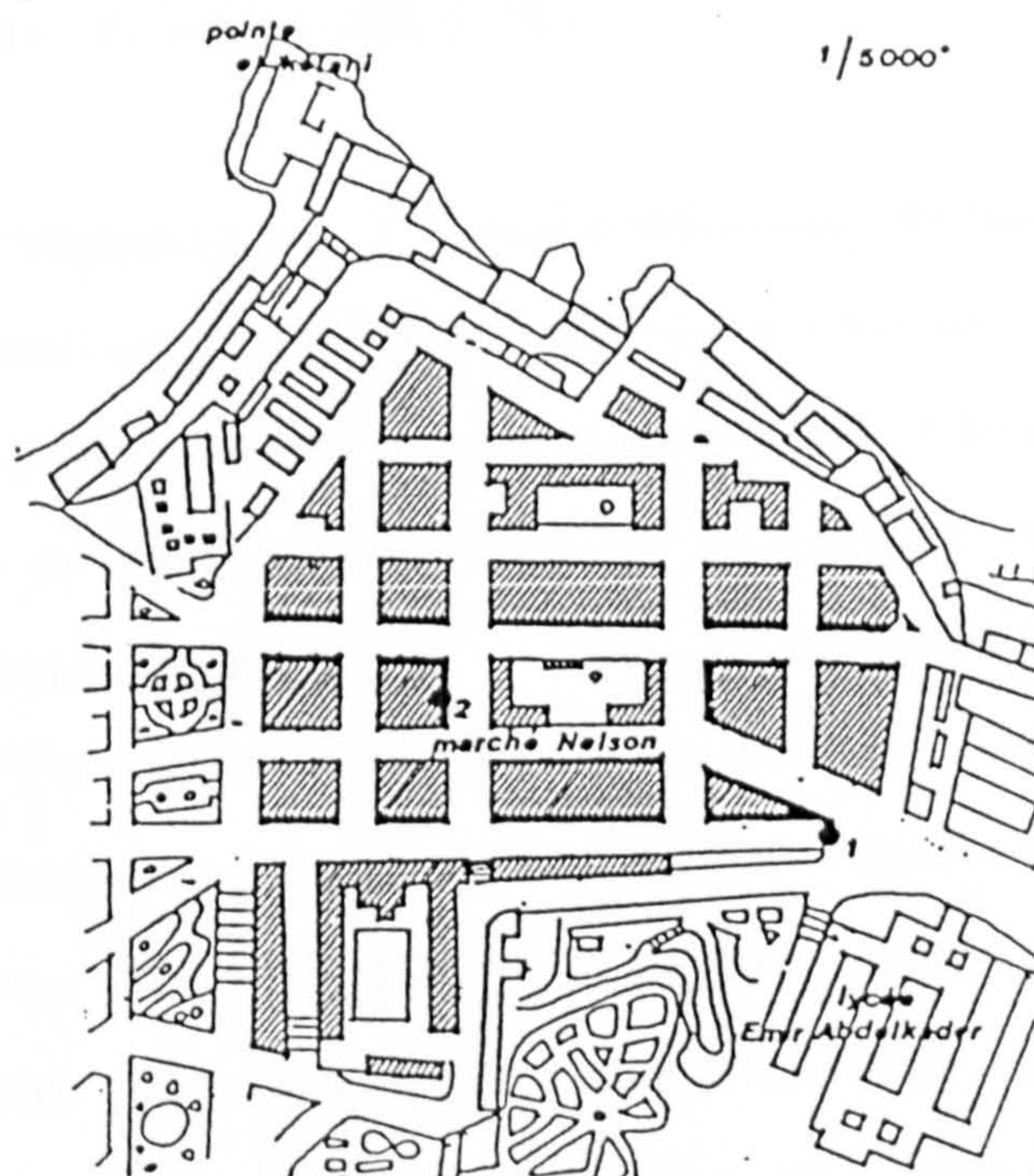
La Casbah, that part of Algiers which was gradually decaying under the ever increasing overcrowding, was not included in any of the plans. The few projects touching the perimeter of the old city were concentrated on the area already damaged by earlier French 'military restructuring '. The disorder of the development in the 'Basse Casbah' or 'le Quartier de la Marine' constituted an obstacle to the traffic flow and in 1937, the 'Avenue du 1er Novembre' (35m wide) was erected, lined with high rise buildings, creating a screen between the old city and the sea (fig A1.5).

The massive influx of rural migrants to cities and the political threat they started to constitute led the French government to create several housing programmes for Muslim populations and even tolerate the growth of shanty towns. The government published a circular (11.01.37) which constituted a charter of the 'indigenous' housing. Consequently, several housing estates were built at the period and



The ESPLANADE in BAB-EL-OUED ,a combination of a road grid and blocks expressing faithfully the Paris urban design and architecture;wide streets,lined with arcades,building with the same height lined up and uniform facades .

Fig(A1.5) : An example of French urban design

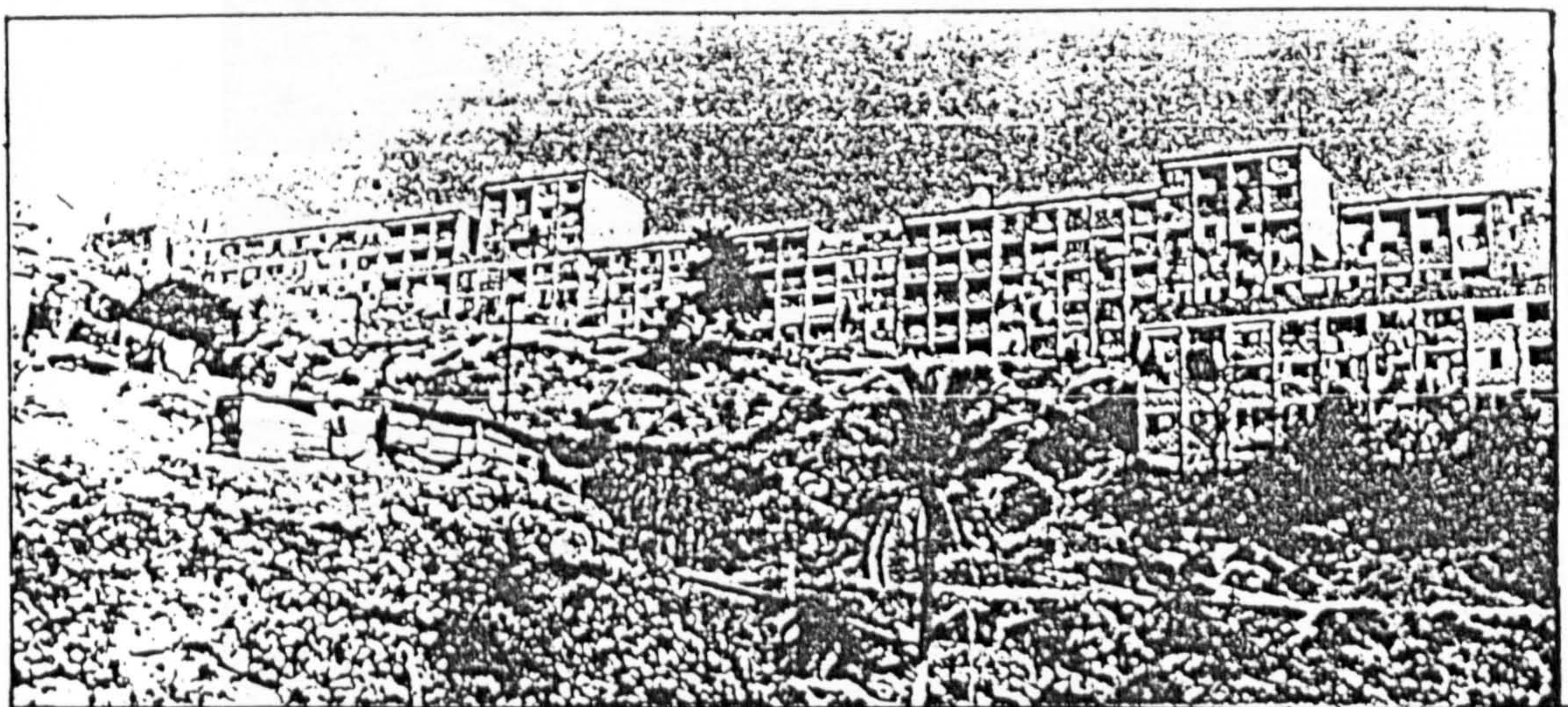
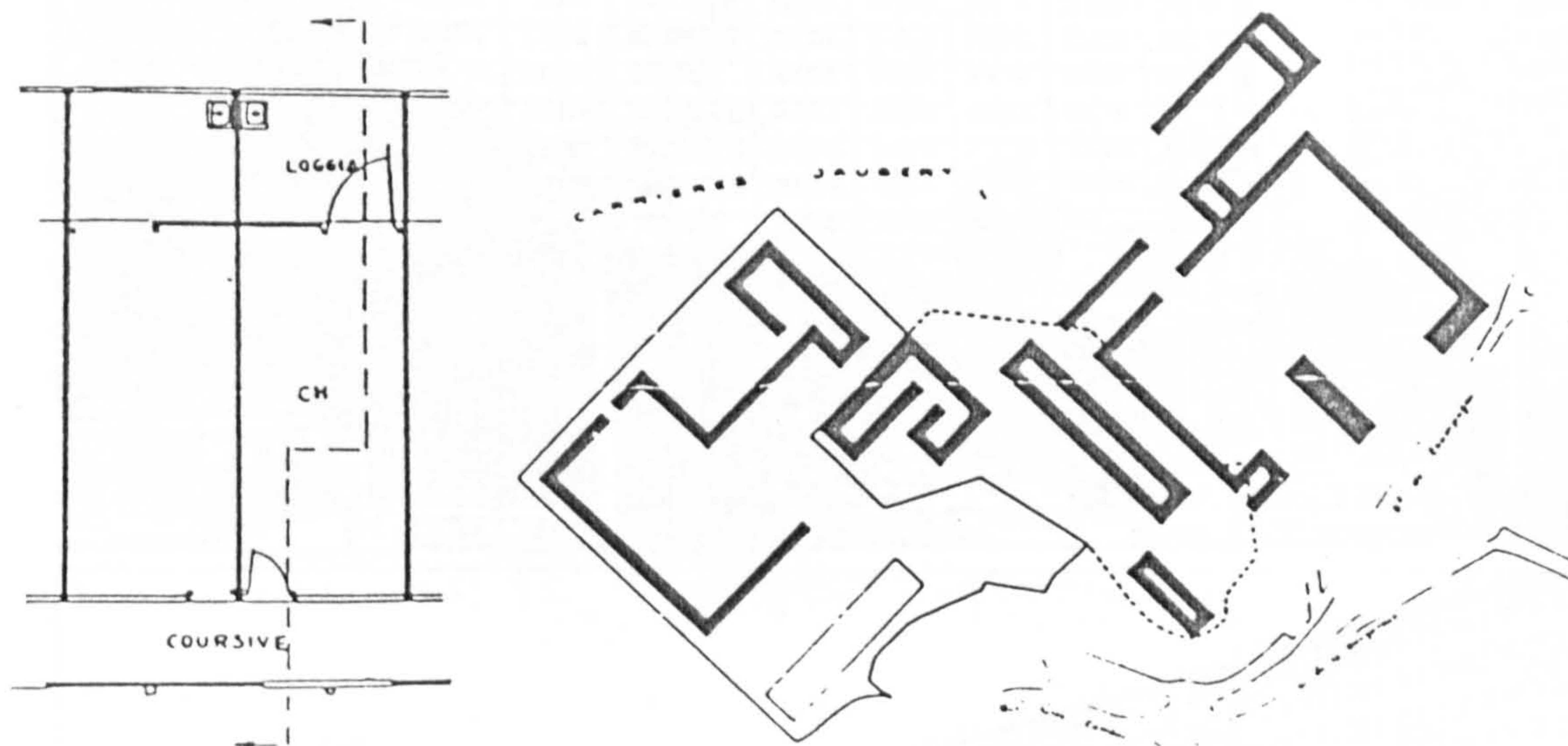


allocated to Muslim populations (fig A1.6 and A1.6a).

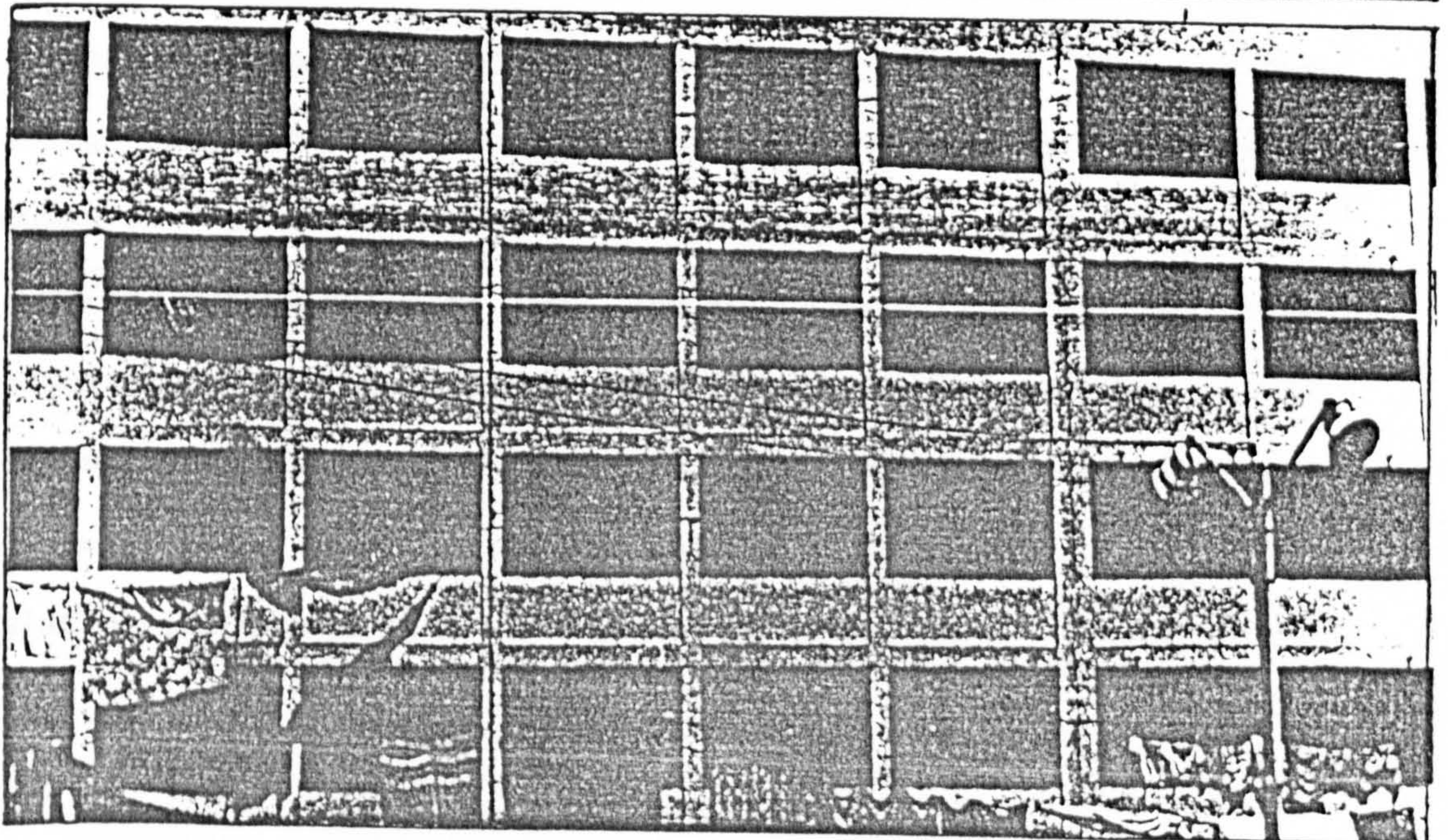
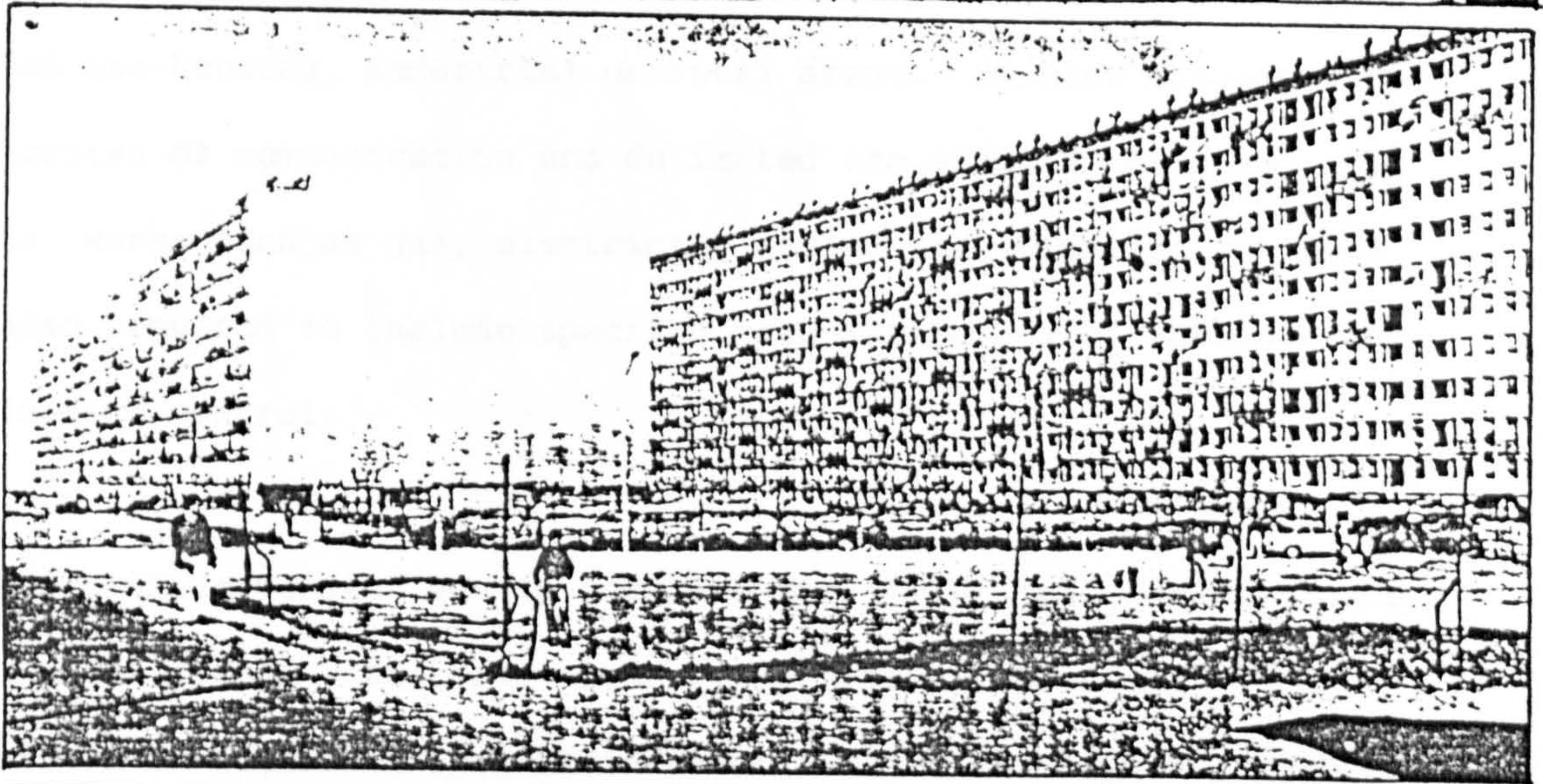
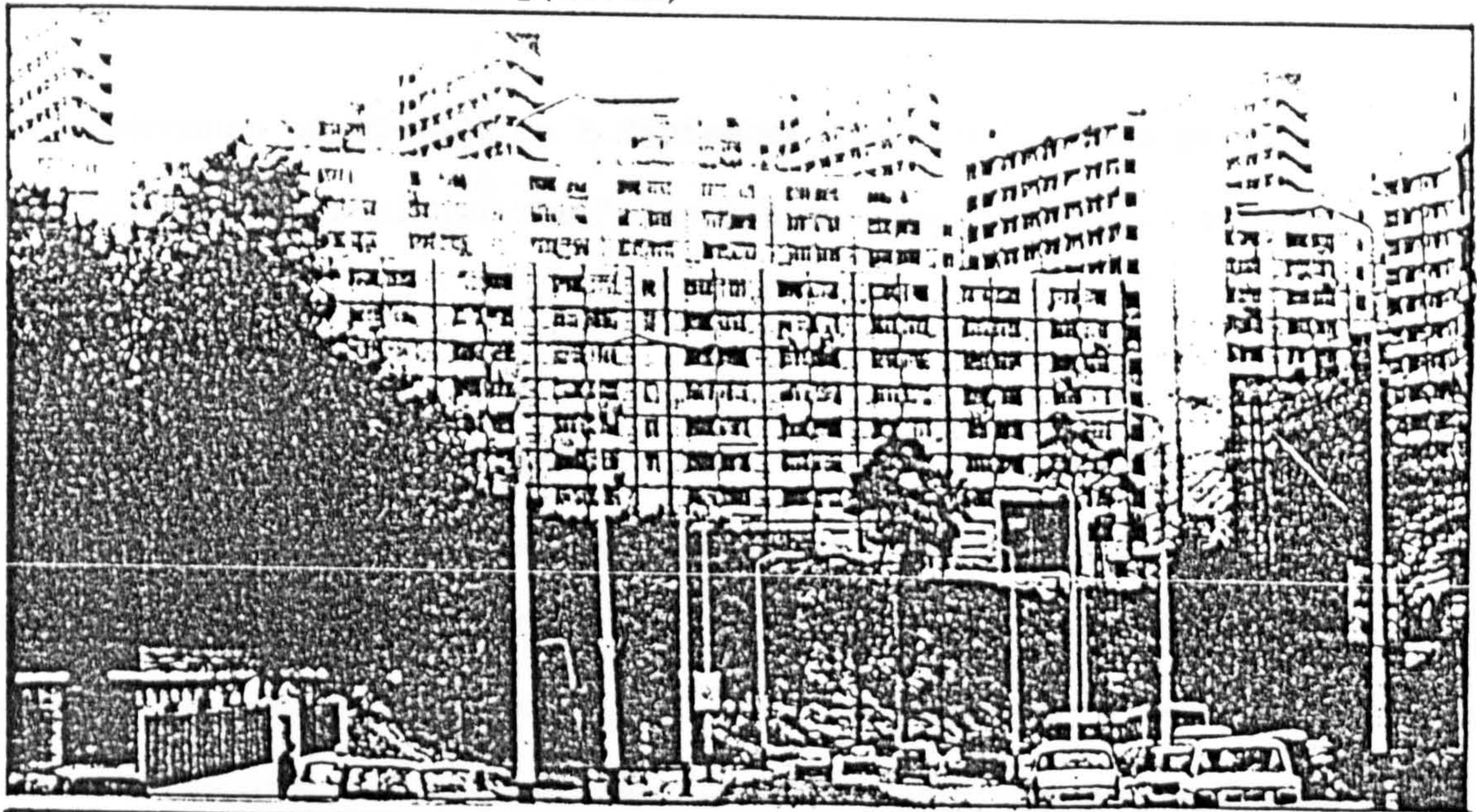
Several agencies (C.I.A, Compagnie immobiliere Algerienne, Office HLM, Habitat a loyer modere, and other co-operatives) were created to fight the slums and from 1950 to 1956, 45,000 dwelling units were produced. In 1959, the 'Plan de Constantine' [68] was introduced to alleviate social and economic disparities. Large programmes of industrialisation, education and social facilities were set up. The economic decentralisation from the 4 largest cities to the benefit of 15 middle cities was one of the main objectives. This was sustained by the preparation of 30 other towns to play a dynamic economic role and attract industrial investment and the surplus of migrant population. A total of 210,000 dwelling units were to be built throughout the whole country within a 5 year period. Algiers was to benefit from 53,000 dwelling units, the largest share. Among the first implementations was the satellite town of the Annassers situated in the east of Algiers. 5,000 out of the 25,000 units programmed were started before independence. The rest was not continued until 1969. Therefore, the 'Plan de Constantine' presented new housing policies, and for the first time the Muslim population was to be integrated in the process of development. Furthermore, the authorities began to realise the value of the old indigenous towns, and a renovation programme was set up in 1961 [69].

It was also after the 'Plan de Constantine' that the Metropolitan decree of 58-1463 (31 December 1958) was made applicable in Algeria

Fig(A1.6) : Typical housing development initiated by the French for the Muslim population



Fig(A1.6a)



by the ordonnance of 60-960, on 6 September 1960 [70]. This provided for two categories of plans: The 'plan d'urbanisme directeur' and the 'plan de detail'.

The 'plan d'urbanisme directeur' was to be instituted in all 'communes' of over 10,000 inhabitants and was intended to discuss the general land uses and to fix the essential elements within a framework for development (article 1). Consequently, article 2 established the division of the area into different zones according to land use-housing, industrial or rural areas. It also outlined the main routes of communication and delimited the area to be used for public works such as gas, electricity and water. Finally, the 'PUD' was also required to include specific regulations with respect to development control.

The 'Plan de detail' was to complete the 'PUD' as required and deal with certain sectors covered by this latter (i.e; zones for renovation or requiring special interventions). Development control and planning standards in French colonial Algeria were at the beginning specific to each 'commune' and could vary between 'communes'. In its origin, planning law itself was not distinguishable from building law. And most controls formulated were concerned with the sitting, size and external appearance of the buildings. This was changed by the introduction of the law of 55-900 of 7 July 1955, which introduced national level regulations. This legislation introduced also the 'permis de construire'. The grant of

the permis de construire was subject to the construction project compliance with the town planning provision contained for example in the 'PUD'.

The CADAT, Caisse Algerienne d'Amenagement du Territoire (Algerian office for town and country planning), was created in 1956 to deal with town and country planning. Its main role consisted on the acquisition of land for offices, housing and industrial development. The second task was the provision of all services on the site. The CADAT was to be controlled by a 'Conseil de Surveillance, comprising the following:

- The general secretary of the Algerian administration
- A representative designated by the Minister of construction
- The general Director of finance
- The Director of public works, construction and transport
- The Director of Energy and industrialisation
- The Director of agriculture and forestry
- The Vice President of the 'Banque d'Algerie'
- A representative of the HLM, Habitations a loyer modere (Moderated rent housing). (Article 88-2)

A1.9 THE SETTLEMENT SYSTEM AFTER INDEPENDENCE

The effect on the settlement system of the confusion immediately following Algerian independence was quite unique. Within a very short time, most towns were completely transformed in ethnic composition, as massive influx of people occupied the quarters vacated by the Europeans, accelerating the rate of urbanisation. Later on, the settlement network was even more affected by the policy orientations of independent Algeria. First, the reorganisation of the settlement system by economic and administrative decentralisation led to a complete spatial reorganisation of the settlement hierarchy. Secondly, the development of a national economic planning based on capital intensive industry, accelerated even more the rate of urbanisation. Moreover, because of the priority given to industrialisation, investment in housing and other services was neglected. Between 1966 and 1977, the proportion of the total population in urban areas increased from 31 per cent to 41 per cent of the total. With an average rate of urbanisation of 5.1 per cent and a natural demographic increase of 3.2 per cent per annum, rural-urban migration reached 1.9 per cent per year [71]. The supposition that the urban structure vacated by the European settlers would support the early stages of industrialisation proved wrong and by 1977 'bidonvilles' or shanty towns were already expanding on the periphery of the large cities. Post independent rural policy (Agrarian revolution and the construction of socialist villages) might also be seen as having aggravated the problem of urbanisation

within the settlement system. Many critics argued that contrary to their purpose, these villages were only a bridge, a step forward towards the city. This is particularly the case in zones around large cities, where the villages can do little to counteract employment and residential attractions to the city [72].

A1.10 PLANNING AFTER INDEPENDENCE

By 1962, one and half million settlers had left the country and the largest cities were half emptied of their inhabitants. This alleviated in a certain way the housing problem for about four years, and led the authorities to consider the problem of housing and physical planning in general as secondary. Most French colonial legislation was retained until 1967 when President Boumedienne proclaimed the complete reconstruction of Algerian legislation (In reality this was not done until 1976, when the National Charter was published and a definitive statement of the national ideology made). It is also in 1967, that the 'PDU' (Plan Directeur d'Urbanisme) was reintroduced to physical planning although with a slightly modified framework: the transfer of responsibility to the 'communes' [73]. The integration of physical planning to national planning was affirmed by circulaire C-2 PMU in 1974 which introduced the 'Plan de Modernisation Urbaine' (PMU) to physical planning, and specified that whilst the 'PDU' constituted the physical guide to action, and exercised legal controls on land use construction, the PMU was mainly a 'programme hierarchise d'investissements' and enabled the operation

of the PDU through the provision of the financial framework. The PMU was to operate within the framework set by the 'SEP', the "Secretariat d'Etat au Plan", the central organ for economic and social planning which formulates regional development policy and allocates the national budget. National level responsibility for planning was first through the Ministry of Public Works and Construction. It was replaced in 1977 by the Ministry of Housing and Construction which became in 1979 the 'MUCH', the Ministry of Urbanism, Construction and Habitat. The main task of this latter consists of the preparation and effecting of broad national policy and planning strategies. It is also responsible for various planning sanctions and enforcement. There are various other national level agencies connected with planning. The first of these national agencies was 'ETAU', Central Department for Public Works, Architecture and Urbanism. This was replaced in 1971 by the 'CADAT', Algerian Office for Town Planning. This is now replaced by two specialised bodies, the 'CNERAT', Centre National d' Etudes et de Recherche pour l' Amenagement du Territoire, and the 'CNERU', Centre National d' Etudes et de Recherche en Urbanisme. Other national agencies include national corporations concerned with infrastructural provision, such as the 'SONELGAZ', National corporation for electricity and gas. The 'BNA', Algerian National Bank, is responsible for advancing loans to enable the implementation of certain planning operations. Inter-ministerial consent is necessary to ratify certain planning operations. This usually involves the Ministere de l'Interieur (Home Office), the Ministere des Finances

(Treasury). Regional level responsibility for planning is mainly through the 'DUC' which has primarily strategic planning responsibilities. The 'APC' is concerned with local level development in six sectors: housing, transport, touristic, industrial, agricultural and cultural, as well as the enforcement of particular statutory planning instruments. The main instrument of physical control, 'the permis de construire', which was introduced to Algeria by the French in 1955, was reaffirmed in 1975. The 'APC' tests each 'permis de construire' first for its compatibility with the 'PDU' where it exists and then for its conformity with the planning standards contained within Decret 75-110 [74].

A1.10.1 HOUSING AND SOCIAL INFRASTRUCTURE

The 1980-84 and the 1985-89 development plans were both characterised by the new emphasis given to housing and social infrastructure, such as health and education. The high proportion of proposed spending (8% of the total investment is allocated to transport infrastructure and 16% to housing) of the 1985-89 Development Plan reflects the need to cater for the requirement of a rapidly expanding population, and the chronic housing shortage. About 300,000 dwelling units are to be built during the Plan period, and some 350,000 units which were started under the previous plans are to be completed [75].

Due to the decentralisation of the building activity, about 100,000 new dwelling units were built in 1982-83 [76]. Indeed, building, traditionally a State concern, was boosted by two factors: First, the 30,000 dwelling units built by the private domestic construction industry; and secondly, the prefabricated construction techniques brought by foreign companies and promoted by the 'ONEP', the Office National de la Promotion de la Construction en Prefabrique (National office for the promotion of prefabricated construction).

ONEP was founded in March 1982, following the success of imported building techniques in the rebuilding of El-Asnam after the 1980 earthquake. By the end of 1982, ONEP had signed contracts of about 5m.sq m, at a cost of \$2,800m [77] was the world's largest prefabricated construction programme, and although costly, it was used as the ultimate means to tackle the country's ever increasing and acute housing needs. Most of ONEP contractors were foreigner and came from France, Spain, Italy, Denmark, Belgium, the UK, Switzerland, Portugal and Sweden. The 1982 programme included 21,000 dwelling units, 34 fully equipped 200-bed and 120-bed hospitals, 60 polyclinics, 83 training centres, 41 technical schools, 122 schools, 6 biological research centres, and 6 university accommodation centres [78]. However, because of its high cost to Algeria's foreign exchange, ONEP awarded no contract in 1983, and was disbanded the following year.

In 1983, the Government launched another scheme for speeding up building, namely the use of foreign contractors under bilateral agreements with foreign governments [79]. Already, in late 1982, France had signed a bilateral agreement with Algeria to build 60,000 dwelling units as one of the measures that were agreed under a general co-operation agreement. By late 1983, French firms had signed contracts to build about 27,000 dwelling units [80]. Since the dissolution of ONEP, however, there has been a general shift in Government policy towards housing construction. Contracts tend to be awarded to companies from Eastern Europe as they can complete the work more cheaply.

With the collapse of oil prices in 1986, the Government reduced more its involvement in the building activity process and gave full freedom to the private sector to undertake development of its own. Even those who have built their houses illegally are now offered amnesty. However, despite all this the 1985-89 development target of 300,000 dwelling units is very unlikely to be met.

A1.11 NOTES AND REFERENCES

1.
Commissariat National aux Recensements et Enquetes Statistiques .
"Recensement General de la Population et l'Habitat". Algiers, 1987.
2. United Nations . "World Population Prospects, estimates and projections as assessed in 1984". New York, 1986.
3. Ibid.
4. Commissariat National aux Recensements. op.cit. 1966.
5. Ibid., 1987
6. Benachenou,A. "l'Exode Rural en Algerie ". Presses d'ENAP, Alger. 1979.
7. United Nation. op.cit.
8. Commissariat National aux Recensements. op.cit. 1966 and 1977.
9. For more details about the physical geography and climat of Algeria, see Despois, J. and R.Raynal. "Geography de l'Afrique du Nord-Ouest". Edition Payot, Paris. 1967. Second part, pp.70-209.
10. Despois,J. "l'Afrique Blanche Francaise, VolI : l'Afrique du Nord". Presse Universitaires de France, Paris. p.116
11. Gautier,E. "Le Passe de l'Afrique du Nord, les Siecles Obscures". Edition: Payot, Paris. 1937. pp.124-157.
Knox,A. "New Playground or Wanderings in Algeria". C. Kegan Paul and co., London. 1881.
12. Thomas-Stanford,C., "About Algeria", John Lane the bodley head, 1911.
13. Nelson,H.(ed). "Algeria, a country study". Foreign Area studies, The American University, 1979. p.11.
14. Laroui,A. "The History of the Maghrib, an interpretive essay." Princeton University Press, Princeton, New Jersey. 1977. pp.67-69.
15. This is well covered by Ibn-Abd-Elhakem in "Conquete de l'Afrique du Nord et l'Espagne". Edited and translated by Gateau,A, Alger.

- 1942.
16. Gautier, E. "Le Passe de l'Afrique du Nord, les siecles obscures." Paris. 1937. p.248.
 17. Ibid. p.285
 18. Ibid. pp.318-333
 19. Marcais, G. "La berberie Musulmane et l'Orient au Moyen Age." ed. Montaigne, Paris. 1946. Third part, chapI, II, III, pp.231-305.
Le Tourneau, R. "The Almohad Movement in North Africa in the Twelfth and Thirteenth centuries". Princeton University Press, Princeton, New Jersey. 1969.
 20. Laroui, A. op.cit. pp.238-239
 21. Earle, P. "Corsairs of Malta and Barbary." Sidgwick and Jackson, London, 1970. pp.3-23
 22. Ibid.
 23. Julian, C. "Histoire de l'Algerie Contemporaine". Press Universitaire de France, Paris, 1964.
 24. Ibid. pp.22-63
 25. Naval Intelligence Division. "Algeria". V.II, Geographical handbook series, May 1944. p.1
 26. Ibid. chap XII, XIII, XIV.
 27. For a history of the Algerian nationalism, see Kaddache. "Histoire du Nationalism Algerien, Question National et Politique Algerienne 1919-1951". (VolI et II). Societe National d'edition et de Diffusion, Alger. 1981.
 28. Kaddache. op.cit. p.532-570
 29. Ibid.
 30. Ibid.
 31. Mahsas, A. "Le Mouvement Revolutionnaire en Algerie". ed. l'Harmattan, Paris. 1979. p.179.
 32. Ibid. pp.196-204.
 33. Ibid. pp.216-230.
 34. Nelson, H.(ed). "Algeria, a country study". Foreign Area

- Studies, the American University. 1979. pp.40-48.
35. Horne,A: "A Savage War of Peace, Algeria 1954-1962". London, Macmillan. 1977.
 36. Ibid.
 37. Gordon,D. "North Africa's French Legacy 1954-1962". Harvard University Press, Cambridge, Massachussets. 1962. p.80.
 38. Nelson. op.cit. pp.64-69.
 39. Official statistics published by le Front de Liberation National(ed.). "La Charte d'Alger". FLN, Alger. 1964.
 40. Nelson. op.cit. p.193.
 41. This "coup d'etat is well covered in Chaliand, G. and J. Minces. "l'Algerie Independente (Bilan d'une Revolution Nationale)." Paris, Maspero. 1972.
 42. Gordon,D. op.cit.
 43. Nelson. op.cit. p.152.
 44. Nelson. op.cit. pl95.
 45. For a more comprehensive account of the Algerian economy, seeBenchouria, T. "l'Economy d'Algerie". Paris, Maspero. 1980, and Nelson>. op.cit. Chap 3.
 46. The whole Algerian decentralisation is discussed in Prenaut,A. "Centralisation de la Decision a Alger, Decentralisation de l'Execution en Algerie: la Mutation des Fonctions Capitales d'Alger". Cahiers Geographiques de l'Ouest. no.1. 1978. pp.2-20.
 47. Commission Nationale aux Recensements et Enquetes Statistiques. "Recensement General de la Population et de l'Habitat", Alger, 1966 and 1977
 48. Ibid.
 49. Ibid.
 50. For more details about the different rural policies see Ripault-Megerand, M. "Les Villages Socialistes en Algerie". Annuaire de l'Afrique du Nord, vol.14. 1975.
Mahdjoubi,L. "For an Improved Rural Housing to Limit Distress Migration". MPhil Thesis. Department of Town and Country Planning. University of Newcastle Upon-Tyne. 1985
 51. Rapport general du II Plan Quadriennial. Alger. 1974.

52. Ministere de la Planification et de l'Amenagement du Territoire. Alger. 1979. 1979.
53. Societe Nationale des Materiaux de Construction. "Rapport d'activites". Alger. 1979.
54. Rapport du I Plan Quinquenal. Algiers. 1980.
55. Rapport du II Plan Quinquenal. Alger. 1985.
56. Lawless,R. "Algeria : Functional and Social Transformation of a Colonial Urban System under a Planned Economy." In Obudho,R and S. El-shakhs.(eds). 'Development of Urban Systems in Africa'. New York, Praeger. 1979. p.80.
57. Official statistics published by FLN. op.cit.
58. Cornation,M. "Les Regroupements de la Decolonisation en Algerie". Paris, les Editions Ouvrieres. 1967. p.122.
59. Ibid. p.58
60. Bourdieu,P.and Sayed,A. "Le Deracinement: la Crise de l'Agriculture Traditionnelle en Algerie". Paris, Edition de Minuit. 1964. p.21.
61. Leswe,M. "Une Experience de Deplacement de Population: les Centres de Regroupements en Algerie". Annals de Geography. V.71. no.388. 1962. p.595.
62. Journal Officiel de l'Algerie. 1922. Decret 5-722 of 5 July 1922.
63. Deluz,J. "Apercu Critique sur l'Architecture et l'Urbanisme a Alger". EPAU, Alger. 1979, p.19.
64. Ibid.
65. Rotival. 1933. Cited by Deluz,J. op.cit.
66. Deluz,J. op.cit. p.21.
67. Gasagne, Mayor of Algiers as cited by Deluz,J. op.cit. p.21.
68. Journal Officiel de l'Algerie. 1960b. Decret 60-960 of 6 September 1960.
69. Deluz, J. op.cit. pp.161-177.
70. Journal Officiel de l'Algerie. 1960b. op.cit.
71. United Nations. op.cit.

72. Dahmani, M. "l'Algerie, Legitimite Historique et Continuite Politique". Paris, Edition le Sycomore. 1979. p.142.
73. Journal Officiel de la Republique Algerienne. 1967. Ordonnance 67-24 of 18 January 1967.
74. Journal Officiel de la Republique Algerienne. 1975e. Decret 75-110 of 26 September 1975.
75. Rapport du I et II Plan Quinquenaux. op.cit.
76. Ministere de l'Urbanisme de la Construction et de l'Habitat. 1984.
77. Ibid. 1985.
78. Ibid.
79. Ibid.
80. Ibid.

APPENDIX TWO

ISLAMIC LAW

A2.1 BIRTH OF THE DIFFERENT SCHOOLS OF LAW

The spread of Islam in 622 AD created an effervescent intellectual activity particularly focussed on the conduct of life as prescribed by Islamic principles. Some scholars dedicated their lifetime to the study of this subject and developed it to such an extent that they formed schools of laws (Madhab) based on their findings and teachings. Among the numerous schools of law that arose, only five have survived; named after their founders they are: the Maliki, Shafi'i, Hanafi, Hanbali and Jaffari. The first four schools are Sunni Schools and the last is Shi'i [1].

Most of these schools developed within the first 200 years of Islam, and each one of them created its own geographic area of influence although many overlaps did occur. For example, the Hanbali school regarded as the strictest, has adherents mainly in Saudi-Arabia; the Shafi'is, the widest in extent has adherents in Egypt, Syria, and the Far-East; the moderate Hanafi school which was the official rite of the Ottoman Turkish empire is the one to which most Muslims in the Indian Sub-continent belong; the Maliki school has adherents mainly in the North-African countries, Nigeria and Sudan. Most Shi'ites adhere to the Jaffari school of law. The main

difference between the two sects is that the Shi'ites give prominence to 'Ijtihad' or forming of independent judgement, whereas the Sunnis are more bound by 'Taqlid' or following ancient models. There are very few differences between the different schools of law as they are all basically derived from the same sources, the differences are generally more of emphasis than principle [2]. It is not the purpose of this study to compare in detail the different schools of law, however, it will be noteworthy that they were all influenced by the teachings of Al-Shafi'i (deceased 204 AH or 819 AD).f

A2.1.1 Major sources of law

According to El-Shafi'i there are four major sources 'Usul' of law: The Qur'an itself, the 'Sunna' or divinely inspired behaviour and practice of the Prophet Mohamed, the 'Ijma' or consensus of the Muslim community, and the 'Ijtihad' or use of the human reason in the elaboration of law.

- The Qur'an repeated command to 'obey God and his Prophet' established the precedents of the Prophet Mohamed as a source of law second only to the word of God. Two manuals, those of El-Boukhari (died 870 AD)[3] and Muslim (died 875 AD)[4] were the main references used in Islamic Jurisprudence as authentic accounts of the practice of the Prophet Mohamed [5].
- As far as the 'Ijma' is concerned, El-Shafi'i argues that there

f The Islamic calendar starts in 1 AH or 622 AD when the Prophet Mohamed fled from Mekkah and settled in Medina.

could be only one consensus that of the entire Muslim community, lawyers and laypeople alike.

- 'Ijtihad' was the method by which the principles established by the Qur'an, Sunna and consensus are to be extended and applied to the solution of problems not expressly regulated therein.

The following statement by El-Shafi'i quoted by Schacht (1950)[6], summarizes his legal theory:

'On points on which there exists an explicit decision of God or a 'Sunna' of the Prophet Mohamed or a consensus of the Muslims, no disagreement is allowed. On the other points scholars must exert their own judgment in search of an indication in one of these three sources; he who is qualified for this research is entitled to hold the opinion which he finds implied in the Qur'an, Sunna, or consensus; if a problem has two solutions, either opinion may be held as a result of systematic reasoning, but this occurs only rarely.'

(El-Shafi'i) [7]

Despite the great intellectual activity that characterised that era, El-Shafi'i fundamental theory was never challenged. On the contrary, in the century that followed the death of El-Shafi'i in 819 AD, the Sunna of the Prophet (the second source of law advocated by El-Shafi'i) became the focus of attention [8]. Many researchers devoted themselves to the process of tracing and classifying the Prophet's sayings and practices. The research consisted mainly of establishing the origin and trustworthiness of the different

reporters of the Prophet's sayings and practices. These latter were classified in varying orders of authority according to the trustworthiness of their sources.

By the end of the third century of Islam (about 900 AD/922 AD) research into the Prophet's Sunna was accomplished and summarized in different manuals. Two such manuals, those of El-Boukhary (died 870 AD)[9] and Muslim (died 875 AD)[10] have particularly had a high reputation in Islamic jurisprudence and are still used today [11].

The beginning of the fourth Islamic century (about 922 AD) saw the end of the forensic intellectual activity, as many scholars felt that all essential questions had been thoroughly discussed and settled. It followed that from then on, any doctrine had to be derived from the handbooks of the recognised schools of law [12]. As already said before, the school of law which was followed in North Africa and in Algeria in particular was the Maliki school of law. The founder of the Maliki school is Malik ben Anas Al-Asbahi who was born, lived and died in Medina, Saudi Arabia (711 AD-795 AD)[13]. His main written contribution is the 'Muttawa' which consists of a collection of hadiths (the prophet's sayings) and fatawi (opinions of important scholars).

A2.2 DEVELOPMENT OF BUILDING AND URBAN DESIGN GUIDELINES

The development of building and urban design principles paralleled that of Islamic law. Building and urban design guidelines focused primarily on housing and access [14]. Ibn-al-Rami's manuscript (d.1334 AD) summarizes the building principles and guidelines of the Maliki school affecting the urban environment. Most of the cases documented in Ibn-Al-Rami's manuscript (d.1334 AD) show the concern of the jurists and the judges towards the inhabitants' needs in the Arab-Muslim city [15]. The themes out of which the rules of conduct evolved, can be briefly summarized: For the functional appropriation of city territory, the themes implied were avoiding the causing of harm and damage, having regard for the inhabitants' needs as well as for those of businesses. Regarding thoroughfares and lanes, there was the concern first for public interest such as protecting the right of way and insuring that any action or activity would not narrow the way, hinder the circulation or cause harm or damage to the public. As long as these criteria were satisfied, private interest was then considered, projections and chambers were allowed to be built above the streets and lanes.

The privacy of the family was strongly emphasised by the law. This was very well reflected in the cases regarding building height, openings, and the placement of doors. Although there was no restrictions on building height per se, it was the damage caused by raising up a building and therefore intruding onto the privacy of

others which was not allowed. This in turn worked as a measure to restrict building heights all over the city. The same measure was applied to prevent openings in high chambers that would look onto houses as well as to prevent the placement of doors in front of each other.

The privacy issue was also invoked when compelling someone to rebuild his own wall used to protect his neighbour. Judging by the existing traditional environment, the application of these rules did not seem to have been equally enforced. In the instances where the interest of individuals was involved, such as the intrusion into the privacy of the household, be it from a higher building, through a window or door, the rules were always enforced. However, in other instances related to public interest, in which no interest of private individual was involved, the law seems to have been very flexible. This had a major effect on the general street pattern where encroachment on parts of streets and the appropriation as well as complete closing of lanes was regularly practised. The reasons for such a practice can be seen within the conception of the law itself and within its enforcement.

Regarding its conception, Islamic law looked at the street or lane in front of the house as the private property of that house; the law was flexible enough to allow for the use of the air-right of public space such as streets and lanes, which through time, was appropriated and assembled within the private property; and there was the

difference of opinions regarding encroachment of public spaces, especially when there was no harm or damage involved.

Regarding the enforcement of the law, Judges and 'Muhtasib' (officer entrusted with the application of the law, see next section), never intervened without a complaint. Since the practice of encroachment was not uncommon especially in lanes and cul-de-sacs, and since Maliki jurists did not accept any statute of limits regarding the number of years after which a complaint cannot be lodged, many neighbours preferred not to object to new encroachments for fear of retaliation against their earliest actions.

A2.3 INSTITUTIONS IN CHARGE OF SUPERVISING THE TRADITIONAL PHYSICAL ENVIRONMENT

The application of the jurists' opinions was undertaken by the 'Qadi' and the 'muhtasib' whose responsibilities and roles are to be discussed briefly with emphasis on their role in regard to urban and building issues.

A2.3.1 The 'Qadi'

The 'Qadi' was a single judge, appointed by and representative of the authorities, invested with the power of jurisdiction. According to Ibn-Khaldoun quoted by El-Hatloul (1981)[16] his responsibilities included:

'...in addition to the setting of suits, certain general concerns of the Muslims, such as supervision of the property of insane persons, orphans, bankrupts, and incompetents who are under the care of guardians; supervision of wills and mortmain donations... the supervision of public roads and buildings, examination of witnesses, attorneys, and court substitutes, to acquire complete knowledge and full acquaintance relative to their reliability or unreliability. (Ibn-Khaldoun) [17]

El Mawardi, quoted by Liebesny (1975) [18] elaborates more on the the Qadi's responsibilities to supervise the public roads and buildings, he states:

'...(the Qadi) ...exercises police powers in his district. He stops all infringements on streets and public places and causes the removal of all projections of buildings and of all buildings which are too tall. He may proceed on his own initiative regarding these duties without anybody having to lodge a complaint.' (El Mawardi) [19]

A2.3.2 Ahl-al-Khibrah (experts)

These consist of a group of trustworthy individuals chosen by the Qadi to investigate cases where both litigants have no evidence. The group was not a permanent body but was usually designated by the Qadi each time a case arose. Ahl-al-Khibrah had no authority to decide

matters under dispute. Their role was limited to investigating these matters and communicating their findings to the Qadi who decided the case.

This practice of asking experts to investigate disputes, especially those of buildings, was according to Ibn-al-Rami (1334 AD)[20], begun by the Prophet himself. He reported that in a dispute regarding the ownership of a shared wall, the Prophet sent Hudhayfah b.Al-Yaman who was believed to be a master builder, to investigate the case and the Prophet decided accordingly (Ibn-al-Rami, 1334 AD)[21]. The practice continued, it seems, from that time on. The role of Ahl-al-Khibrah and their responsibilities can be classified into three main parts: first damage complaints, second ownership disputes, and third transactions, rent or rebuilding of the 'Waqf' properties (see section 2.3.2.3). In the case of damage complaints the duty of Ahl-al-Khibrah was to investigate whether or not inherent damage was inflicted. They were also expected to suggest solutions to these problems. Regarding ownership disputes, they were supposed to visit the site and report back their findings to the Qadi. Very often they were also asked by the judges to investigate cases related to Waqf properties. Since these latter were placed under the Qadi's general supervision, all transactions regarding these properties had to have his approval. Thus the Qadi usually asked the Ahl-al-Khibrah to investigate in order to ensure that all transactions benefited the Waqf and not anything else.

Ahl-al-Khibrah were usually experts in the field of building. But from the sixteenth century onwards, the group included several members who were not specialised in the building field (Ibn-al-Rami, 1334 AD)[22]. The group was usually composed of an average of eight members. It usually included one court official, the Qadi's deputy or the registrar of the court; one or more masons; and several distinguished persons. In 1796 a new member appeared, who from then on participated in any group of experts designated by the Qadi. This new member was the city engineer. Indeed, Ibn-al-Rami (1334 AD) continuous presence in the group of Ahl-al-Khibrah as well as his involvement in the court regarding walls threatening collapse and buildings encroaching on the public way suggests that he had some sort of official status, whether as a city engineer or some other similar situation (Ibn-al-Rami, 1334 AD)[23].

A2.3.3 The Muhtasib

This referred to an officer who was entrusted with the application of 'hisbah' (to promote good and forbid evil). He was in charge of ensuring the implementation of the rules of conduct within the market and all over the city. His duties included also the supervision of the quality and standards of building materials, as well as ensuring that during the construction and repair of buildings within the market area, nothing prejudicial to public safety was done. The Muhtasib was usually helped in his duties by one or two subordinate officers.

Comparing the office of the Muhtasib to that of the Qadi, Al-Mawardi quoted by Amedroz (1916)[24] stated:

'In two respects the Muhtasib's powers exceed those of a Qadi: he is entitled to examine matters within his jurisdiction in the absence of a complainant, whereas a Qadi must have a litigant competent to complain before him, otherwise he is exceeding his jurisdiction. And for the purpose of repressing wrong, the Muhtasib is invested with the extreme powers of sovereign protector, for, his authority being based on fear, to enforce it by means of fear is no excess of jurisdiction; whereas the Qadi's power being based on justice, his characteristic is a sense of responsibility, and for him to wield the stern powers of the 'hisbah' would be unbecoming..' (El Mawardi) [25]

This comparison shows that the Muhtasib was a quite powerful municipal official. Indeed, together with the Qadi the only municipal officials in the Arab-Islamic city.

A2.4 NOTES AND REFERENCES

1.

From early days Islam split up into a large number of sects, most of which are now obsolete. Today most Muslims know no more about them than the average Christian knows about the early heresies of the Church. However, differently from the Christian Church, it is not doctrinal discussions, but political disagreements which have given birth to the Shisms and heresies of Islam.

The problems started after the death of the Prophet Mohamed. As the Qur'anic text does not specify to whom should the leadership of the community fall after Mohamed, many disputes arose. His son-in-law, Ali claimed the succession, but on several occasions, the choice of the Muslim community, negatived Ali's claims by setting aside his candidature. Nevertheless it was stipulated that that the 'Caliphate' should be reserved to the Prophet's tribe.

The Kharidjites literally dissenters, very early rose up in armed opposition to the prerogative conferred on the 'Quraishites' (members of Quraish, the Prophet's tribe), they form the oldest Islamic sect.

The thorny question of the prophetic 'vicariate' was to provoke the birth of the other scissions including that of the Shi'a. They derive their name from the word Shia, a party, as they were the 'partisans' of Ali, the son-in-law of the Prophet. They deny that the 'Caliphate' or Immamate as they call it can be subject to election. They believe it to be reserved for the descendants of Fatima, daughter of the Prophet and wife of Ali. Since Ali, every Immam has the right to nominate his successor.

2. For further details see Coulson, J. "History of Islamic Law". Edinburgh University Press. 1964.
See also Schacht, J. "An Introduction to Islamic Law". the Clarendon Press, Oxford. 1964.
3. Al-Bukhari (d. 870 AD). "Sahih Al-Bukhari". 9 parts in 3 vls. Kitab Al-sha'ab, Cairo. n.d.
4. Muslim (d. 875 AD). "Sahih Muslim". 18 parts in 6 vls. El Maktaba-el-Fikryah wa Maktabatuha, Cairo. 1349.
5. Coulson. op.cit.
6. Schacht, J. "The Origins of Muhammadan Jurisprudence". 1950. 4th ed., The Clarendon Press, Oxford. 1967.

7. El Shalfi'i (d.819 AD). cited by Schacht,J. 1950. op.cit.
8. Coulson. op.cit.
9. Al-Bukhari. op.cit.
10. Muslim. op.cit.
11. Coulson. op.cit.
12. Schacht. op.cit.
13. Malik,b.Anas.(d.795 AD). "Al-Mwatta Wa-Sharhiha Lil-Siyooti." (Al-Mawatta and its interpretation by Al-Siyooti), Dar Ihya Al-Kutub Al-Arabiyah, Cairo. n.d.
14. Bessim,S. "Arabic-Islamic Cities, Buildings and Planning Principles". KPI ltd, London. 1986.
15. Ibn Al-Rami (d.1334 AD). "Kitab Al-Ilan Bi-Ahkam Al-Bunyan".(The Book for Communicating Building Solutions). Fes, Morocco. 1913.
16. Al-Hatloul,S. "Tradition, Continuity and Change in Physical Environment : The Arab-Muslim city". Unpublished Doctoral Dissertation. M.I.T. 1981.
17. Ibn Khaldoun. "The Muqadimah: An introduction to history", N.J., Dawood(ed), Princeton. 1967. cited by El Hatloul,S. op.cit.
18. Liebesny, cited by El-Hatloul,S. op.cit.
19. El Mawardi cited by Liebesny op.cit.
20. Ibn-Al-Rami. op.cit.
21. Ibid.
22. Ibid.
23. Ibid.
24. Amedroz,H. "The Hisba jurisdiction in the ahkam Sultaniya of Mawardi". In the Journal of the Royal Asiatic Society, January, 1916.
25. El Mawardi. (d. 1058 AD). "Al Ahkam Al Sultaniya wa Al Wilayat Al Diniyah." (Rulers' judgments in religious states), Mustapha Al Babi Al Halabi and sons Press, Cairo. 1973.

APPENDIX THREE

THE SURVEY

The survey was the outcome of discussions, among housing authorities, dwellers and academics interested in housing, about the problems, the Algerian family housed in multi-storey flats might be experiencing.

It was already commonly held that mass produced housing, justified by housing emergencies has ignored the very basic social and cultural needs of the Algerian family. Several research projects had set out to test these assumptions. Their findings, though limited, revealed that indigenous cultural factors are rarely given balanced consideration as design criteria. Today, many attempts are being made in order to fill in this gap. In Algeria, the question of how to create a decent, safe and healthy residential environment, that meets people's socio-cultural needs and expectations has become a top priority in the nation's development program.

Faced with these apparent disparities between 'needs' and 'provisions', this survey focussed on the way in which space is used formally and informally by men and women, their attitudes, behaviour and interactions with their environments, their preferences and their suggestions. A multiple method research strategy was used. It consisted of a study of the layout and design of the area, direct

observation, interviews, a trade-off game, and archival records. Three groups of people were contacted: the dwellers, planning officers and architects, and building contractors.

A3.1 SAMPLING

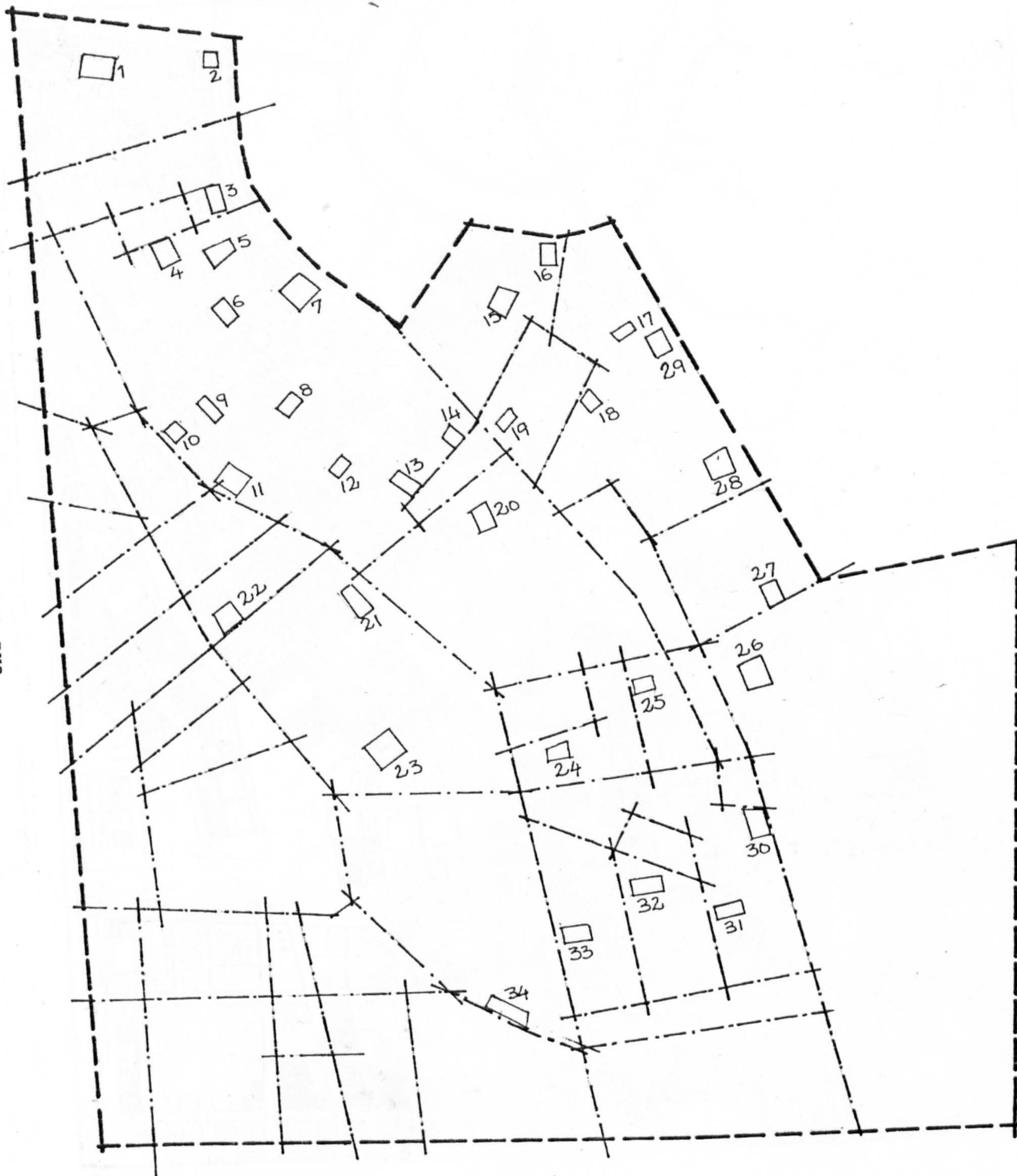
The sampling frame used consisted of a land-use map at a scale of 1/1000, provided by "l' Atelier du M'Zab", the local conservation office. First the boundaries of the study area were identified. (These latter were already marked on the map and included a part of the city centre which explains the large number of blocks devoted mainly to commercial activities, as well as restaurants and hostels, on the periphery of the study area).

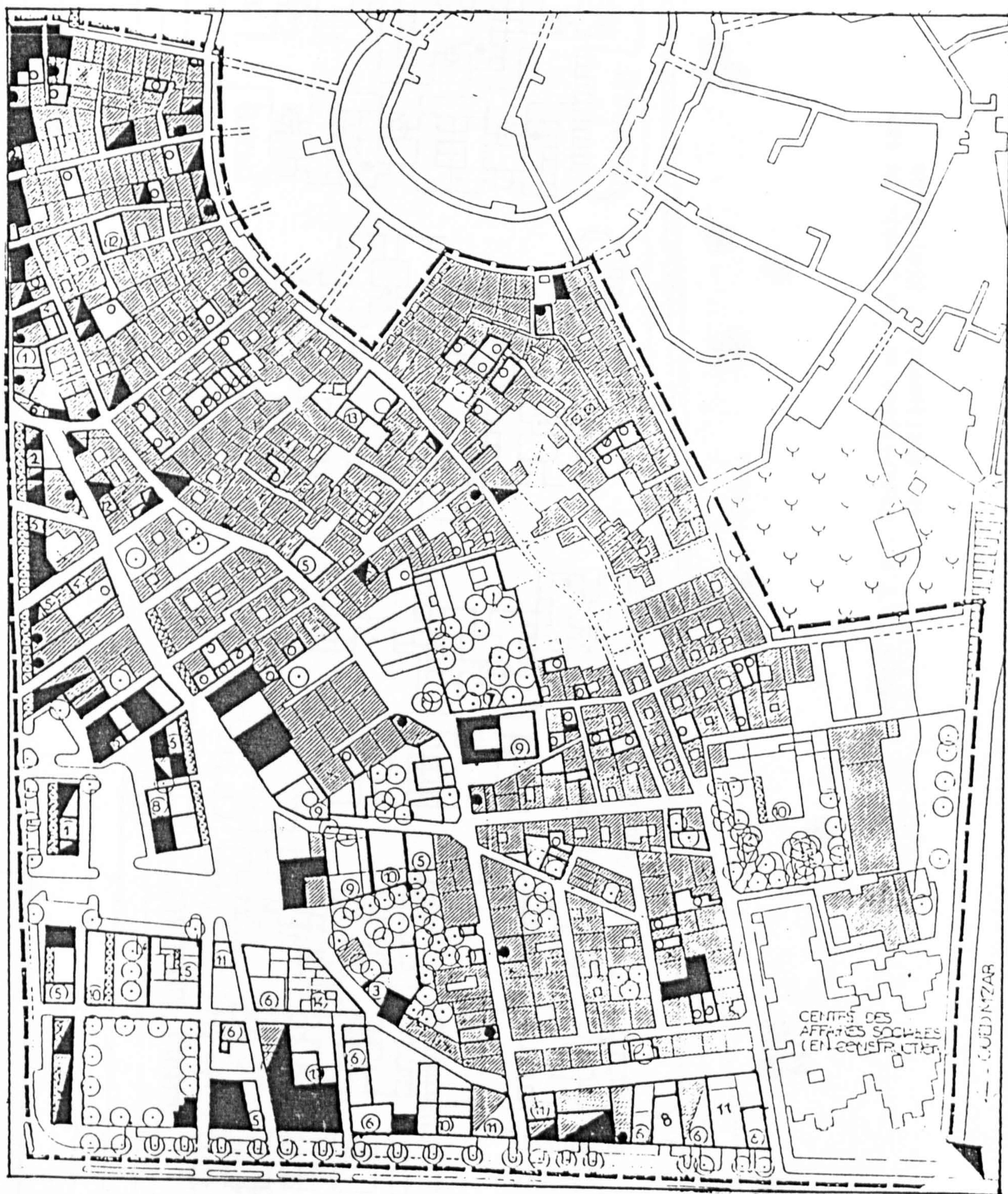
For historical as well as practical reasons, the area was then divided into blocks. In effect, like in most traditional Islamic cities the building of the traditional city of Ghardaia started by ceding land to groups of extended families or 'Achira' (see paragraph 4.9.1). Each group of extended families tended, therefore, to occupy the same block, and the whole city was divided into quarters. Although many alterations and changes occurred since then, some blocks are still housing descendants from the same ancestors. Furthermore, dividing the area into blocks, made the numbering process easier, and less confusing.

Having divided the area into blocks, the next step consisted of identifying and reporting in detail the different shops, and other commercial activities, as these were not to be included in the sample. Starting at a random house in the block. All houses in the block were then given a number starting from 1 to N. House numbers were consecutive along the street. Having numbered on the map all the houses in each block, systematic sampling was used to select the individual dwelling to be visited. This involves starting at a random house in the block and taking every Nth dwelling to the end of the block. In this case, every 10th dwelling (dwelling no.10, 20, etc., on the map) representing a percentage of nearly 10 percent. In this manner, a total of 34 dwellings were selected from the Quartiers des Anciens Moudjahidines (plate A3.1).

The same systematic sampling method was used for the new settlement of Sidi-Abbaz. Only there, official house numbering was used. There, twenty five (25) dwellings (plate A3.2) were selected, however one of them being unoccupied, only 24 were contacted making a total of 58 dwellings.

Plate(A3.1): Repartition of the sample in
the traditional settlement





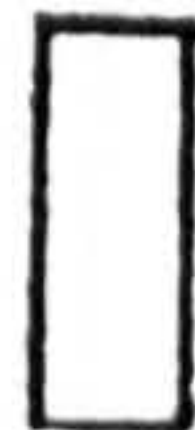
KEY



Dwellings



Corner shops



Other commercial activities

1- Bank

2- Barber

3- Laundry

4- Bakery

5- Offices

6- Cafe shop

7- Military building

8- Warehouse

9- Hammam

10- Hotel+Restaurant

11- Garage

12- Carpenter

13- Mosque

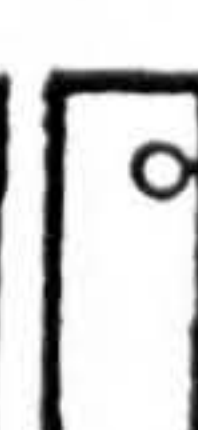
14- Others



Dwellings+shops on ground floor



Dwellings+offices

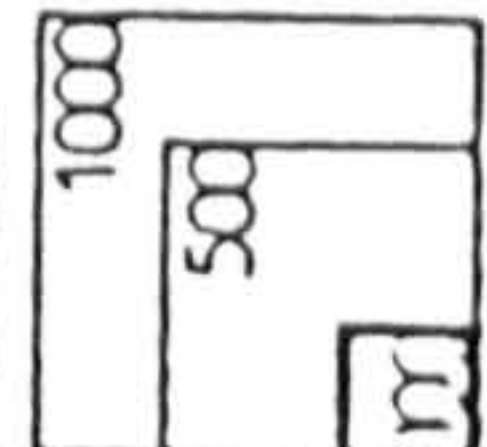


Workshops (shoe making, weaving)



Quartier des Anciens Moudjahidines

METRES



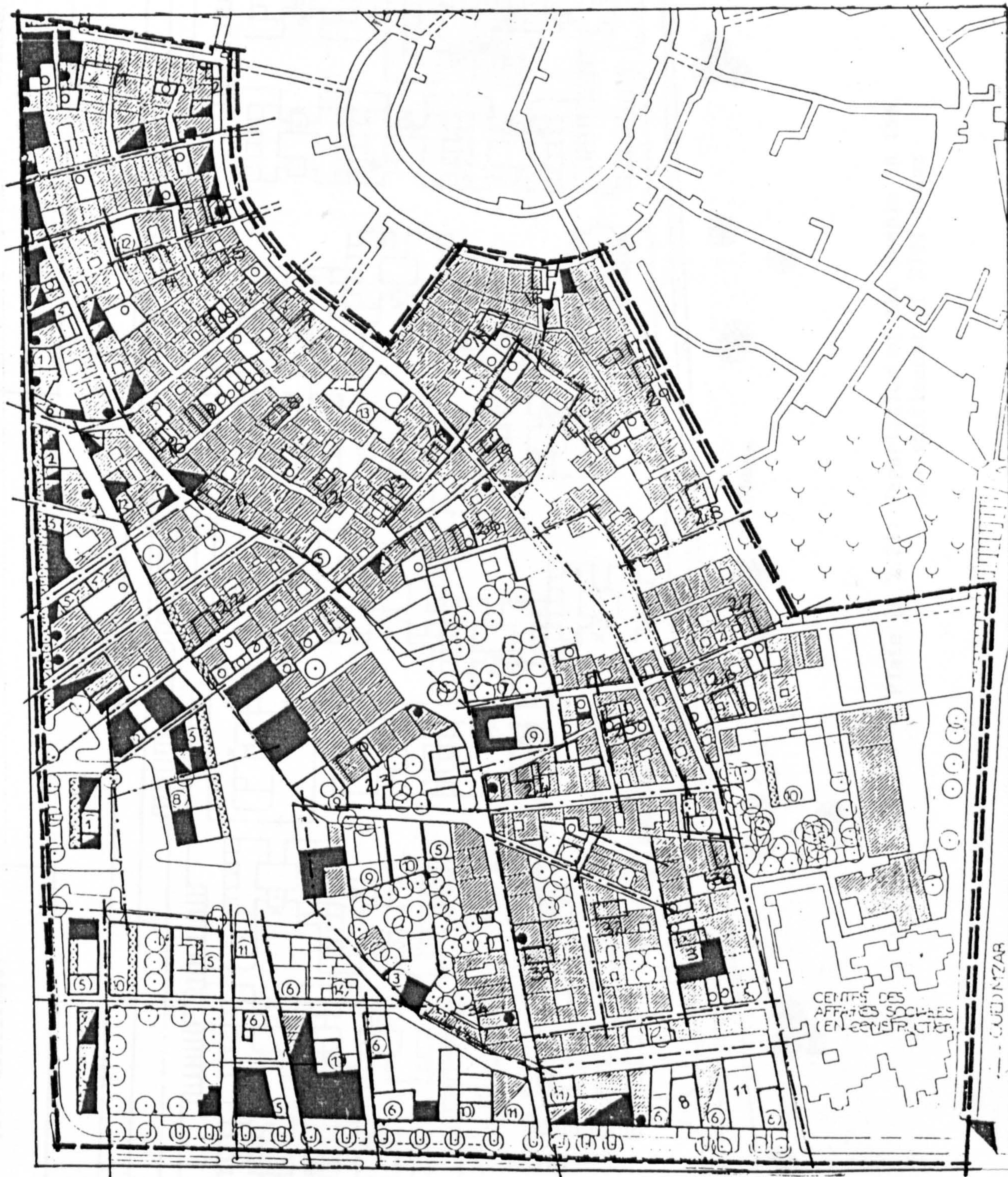
METRES



CENTRE DES AFFAIRES SOCIALES (EN CONSTRUCTION)

QUARTIER

Plate(A3.1): Repartition of the sample in the traditional settlement



KEY



Dwellings



Corner shops



Other commercial activities

1- Bank

2- Barber

3- Laundry

4- Bakery

5- Offices

6- Cafe shop

7- Military building

8- Warehouse

9- Hammam

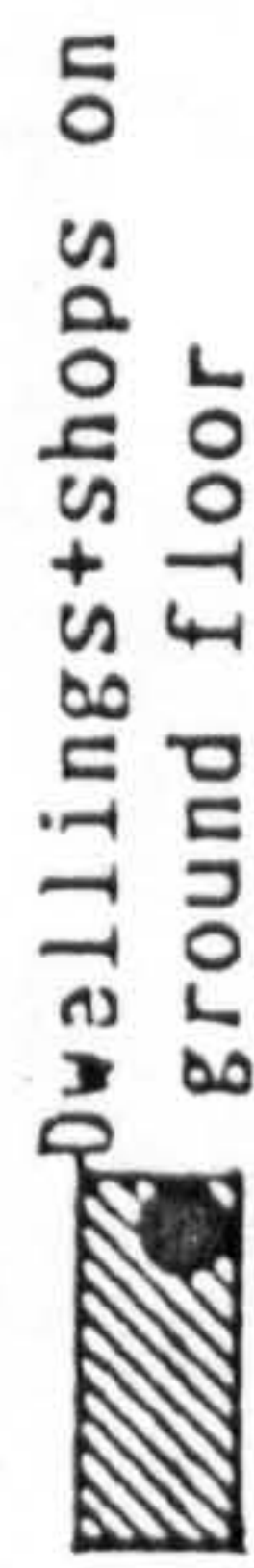
10- Hotel+Restaurant

11- Garage

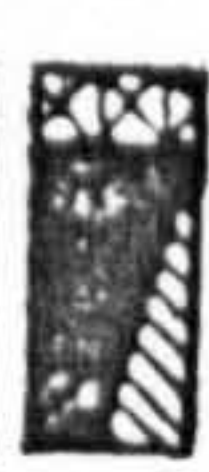
12- Carpenter

13- Mosque

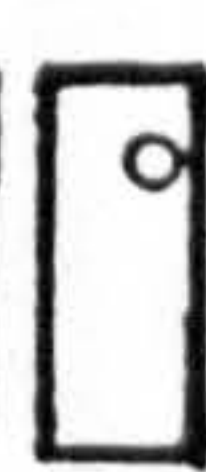
14- Others



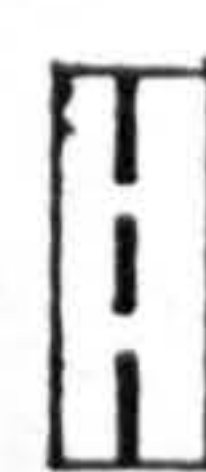
Dwellings+shops on ground floor



Dwellings+offices

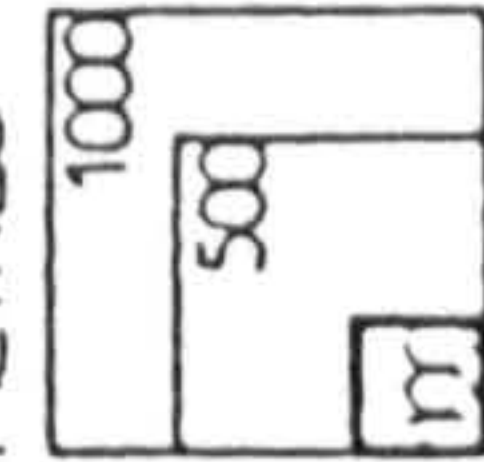


Workshops (shoe making, weaving)



Quartier des Anciens Houdjahidines

METRES²



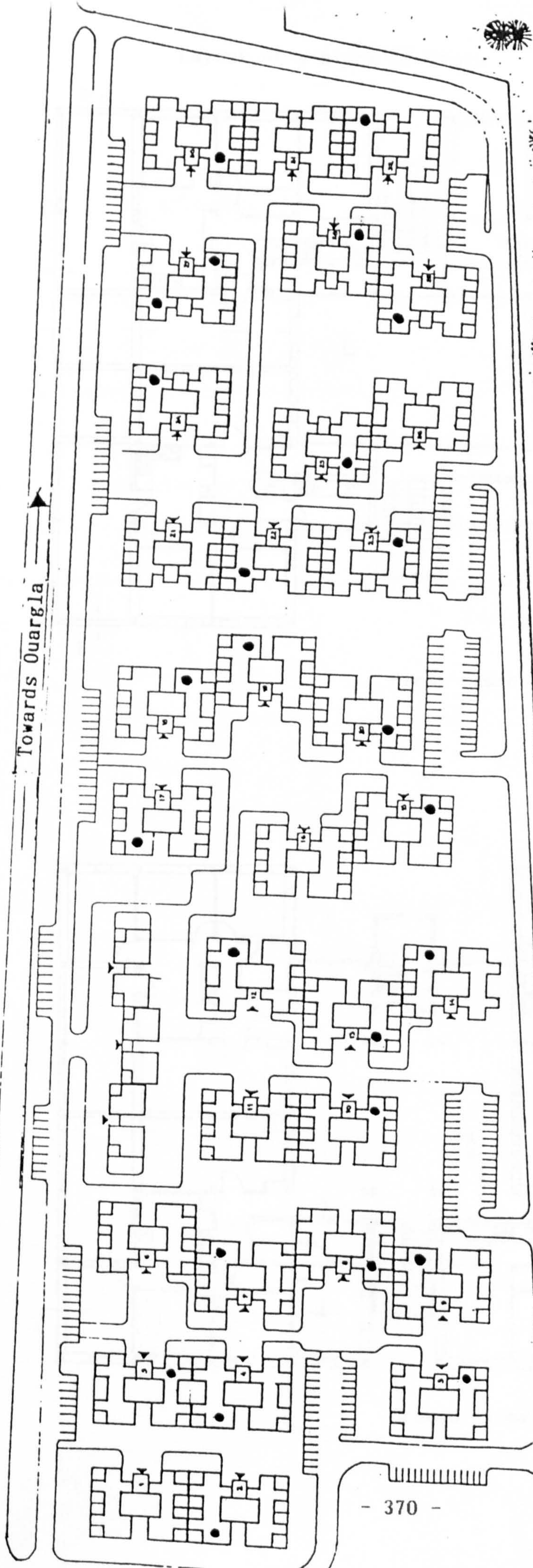
METRES



Construction site
(300 dwellings)

Cimetary

Towards Ouargla

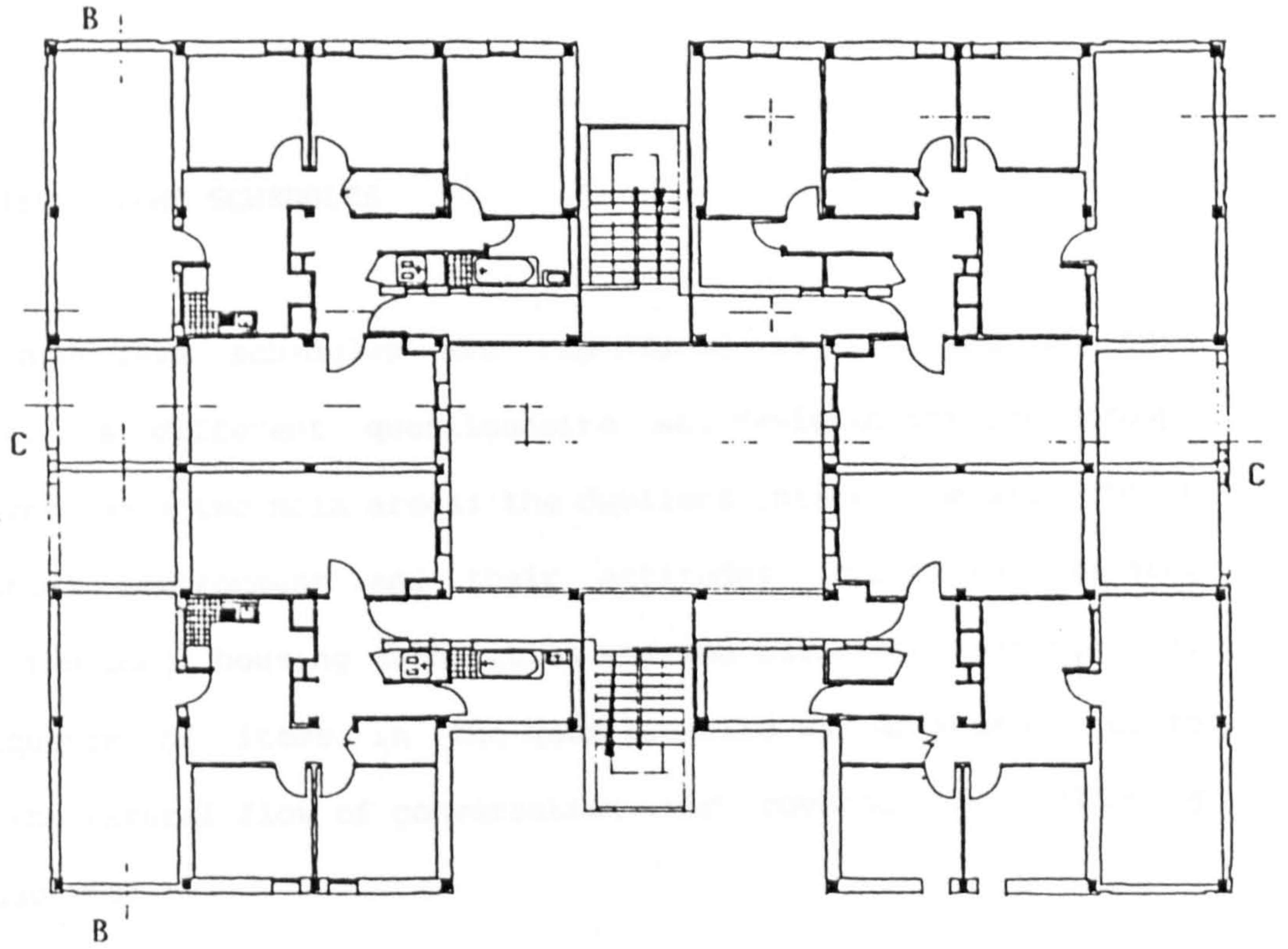


Oases

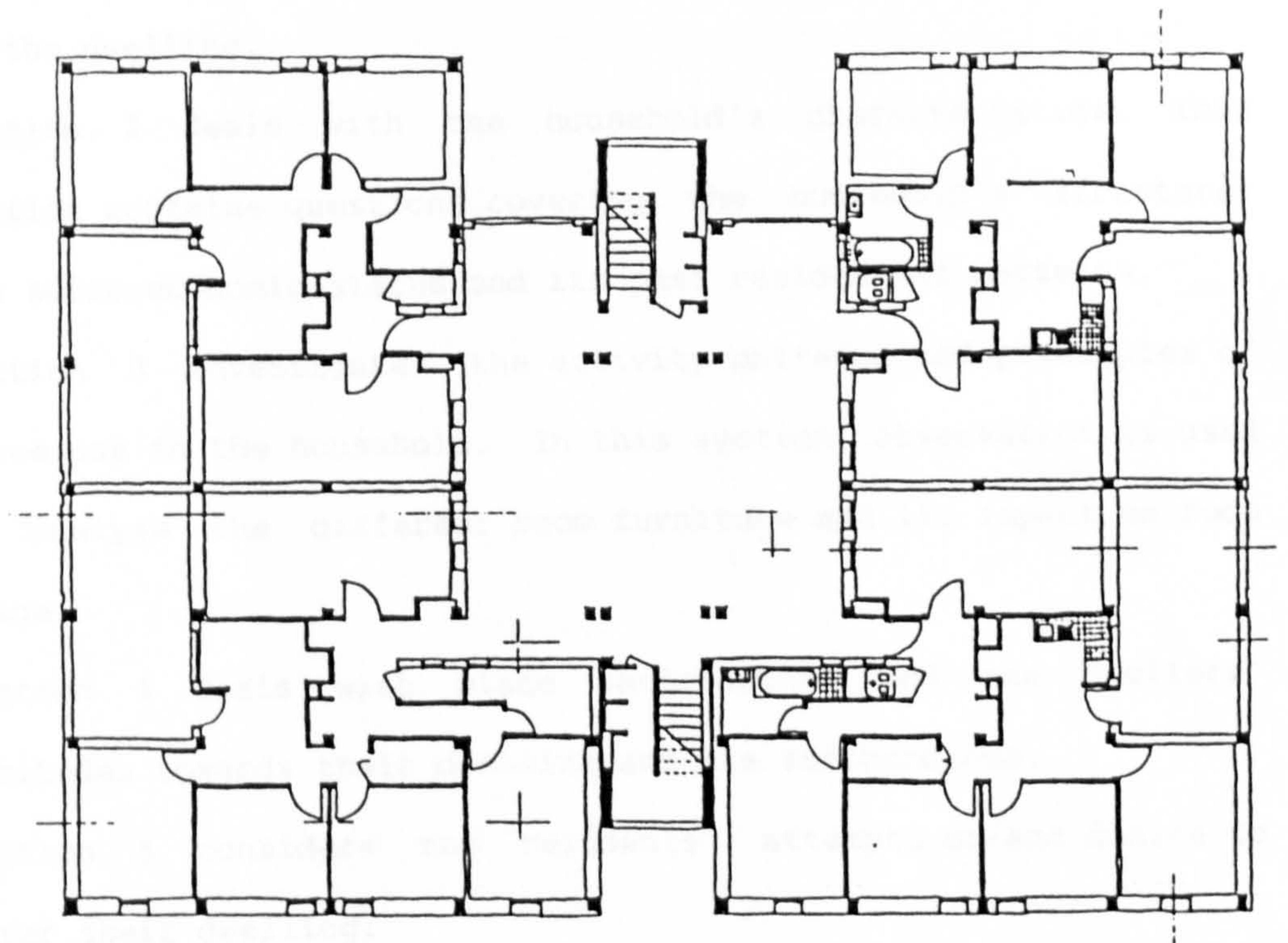
Plate (A.3.2): Repartition of the sample in the
new settlement of Sidi-Abbaz

1/2000

Layout of a block of flats



First floor flats



Ground floor flats

A3.2 THE INTERVIEWS SCHEDULES

The interviews schedules are reproduced at the end of this appendix. A different questionnaire was designed for each group. They investigate two main areas: the dwellers interaction with their residential environment and their attitudes towards the planning system; the local housing authorities and building contractors. The sequence of items in the questionnaire was arranged so as to follow the natural flow of conversation and covered the following major aspects:

Dwellers' questionnaires surveys

This is the main questionnaire. It consists of seven sections with a total of 56 questions.

- Section 1 contains questions relating to the physical description of the dwelling.
- Section 2 deals with the household's characteristics. This section contains questions covering the household's structure, its socio-economic status and its past residential patterns.
- Section 3 investigates the activity patterns and principles of space use in the household. In this section, observation is used to analyse the different room furniture and its impact on room usage.
- Section 4 deals with place satisfaction and the dwellers' attitudes towards their dwelling and its surroundings.
- Section 5 considers the residents' attempts or/and desire to alter their dwelling.

- Section 6 consists of a housing preference game. the game is used mainly to break the monotony which could result from the length of the questionnaire and also to give the interviewee the feeling of a greater involvement in the interview process.
- Section 7 examines the dwellers' attitudes towards the local planning system.

2- Local authorities' and building contractors' questionnaire survey:

The main purpose of this part of the study is to examine how the planning system works from within and from without. The questions are mainly related to the criteria used for the generation of the planning brief of the area; common reasons for rejection of the applications for the 'permis de construire' and the main reasons for people's non respect of the planning and building regulations.

As far as the building contractors were concerned, they were asked about what type of dwelling they build most; the different kinds of alterations people commonly do to the original design approved by the planning authorities and the reasons for such alterations.

A3.3 METHODS OF ANALYSIS

Once the questionnaires were filled in, they were carefully coded. Coding being a system of writing in which numbers or letters are used to condense the answers of the households and other lengthy data. The coding system used in this study is illustrated in table (A3.1). A code book containing a description of the dataset contents was prepared and the data were then entered into the computer. The computer program for the statistical analysis of data- the SPSSX, which is available at the main computer frame MTS of the University of Newcastle upon Tyne, was used for the purpose. The analysis process consisted of performing two main functions:

1. To describe the data to the program
2. To specify what analyses are to be performed.

Table (A3.2) shows an example of the different programs used. The next step consisted of setting up the results under the form of understandable representations. The package used for this purpose was GIMMS*. GIMMS* is a processing system for use primarily in the analysis of geography data through the generation of maps, graphs and tabular information of a thematic kind. Table (A3.3) shows an example of the program used to generate some of the graphs in the thesis.

Table(4.5):STUDY OF THE 'PERMIS DE CONSTRUIRE'

DATE OF SUBMISSION	DATE OF NOTIFICATION	DECISION
11/12/1985	22/07/1986	A
25/04/1985	14/04/1986	R
25/04/1985	14/04/1986	R
27/01/1986	20/04/1986	R
08/03/86	17/06/86	R
27/01/86	16/06/86	R
29/01/85	17/06/86	A
17/04/86	21/06/86	A
29/03/86	04/05/86	A
06/03/86	04/05/86	A
15/08/85	09/05/86	A
01/03/86	29/04/86	R
18/09/85	29/04/86	R
29/04/86	22/07/86	A
02/10/84	20/07/86	A
06/05/86	15/07/86	A
12/05/86	15/07/86	A
25/03/86	15/07/86	A
06/05/86	15/07/86	A
05/05/86	15/07/86	A
23/11/86	22/07/86	A
19/03/86	03/05/86	A
02/02/86	03/05/86	R
20/03/86	29/04/86	R
03/04/85	29/04/86	A
03/03/86	04/05/86	A
19/03/86	13/07/86	A
26/03/86	04/05/86	A
03/03/85	29/04/86	R
29/06/86	11/03/86	R
15/02/86	10/05/86	R
28/04/84	10/05/86	R
19/03/86	10/05/86	A
03/03/86	10/05/86	A
23/02/86	10/05/86	R
03/03/86	10/05/86	A
26/03/86	10/05/86	R
30/03/86	10/05/86	A
01/03/86	10/05/86	A
12/03/86	10/05/86	A
28/04/86	10/05/86	A
03/03/86	10/05/86	A
20/12/85	10/05/86	R
12/01/86	10/05/86	R
24/02/86	10/05/86	A
01/03/86	10/05/86	A
10/12/86	10/05/86	R
26/02/85	10/05/86	A

Total number of applications: 49
 Percentage of rejections: 36.73%

A: approved
 R: rejected

Table(6.2): Past Housing Experience and Satisfaction with Present Surroundings - Old Settlement

	Ksar	New Extension	Rural Settlement in M'zab	Town Elsewhere	Rural Settlement elsewhere	Row Total
Very Dissatisfied	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Dissatisfied	0 0.0	1 20.0	1 25.0	0 0.0	1 12.5	3 9.1
Neither Satisfied nor Dissatisfied	6 54.5	2 40.0	2 50.0	3 60.0	2 25.0	15 45.5
Satisfied	3 27.0	2 40.0	1 25.0	2 40.0	3 37.5	11 33.3
Very Satisfied	2 18.2	0 0.0	0 0.0	0 0.0	2 25.0	4 12.1
Column Total	11 33.3	5 15.2	4 12.1	5 15.2	8 24.2	33 100.0
33 valid cases	1 missing case					

Table(6.3): Past Housing Experience and Satisfaction with Present Surroundings - New Settlement

	Ksar	New Extension	Rural Settlement in M'zab	Town Elsewhere	Rural Settlement elsewhere	Row Total
Very Dissatisfied	0 0.0	2 15.4	0 0.0	0 0.0	0 0.0	2 8.3
Dissatisfied	2 66.7	1 7.7	0 0.0	1 14.3	0 0.0	4 16.7
Neither Satisfied nor Dissatisfied	1 33.3	3 23.1	1 100.0	1 14.3	0 0.0	6 25.0
Satisfied	0 0.0	7 53.8	0 0.0	5 71.4	0 0.0	12 50.0
Very Satisfied	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Column Total	3 12.5	13 54.2	1 4.2	4 29.2	0 0.0	24 100.0
24 valid cases	0 missing case					

- Integer numbers represent the number of cases
- Decimal numbers represent the percentages

Table(6.4): Type of Previous Dwelling and Satisfaction with Surroundings - Old Settlement

	Courtyard House	Multi-storey Flat	Other Flat	Terraced House	Semi-detached House	Detached House	Maisonette	Cottage	Farm	Others	Row Total
Very Dissatisfied	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0
Dissatisfied	1 5.9	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 33.3	1 20.0	3 9.0
Neither Satisfied nor Dissatisfied	8 47.1	0 0.0	0 0.0	1 100.0	0 0.0	1 100.0	0 0.0	3 60.0	0 0.0	2 40.0	15 45.5
Satisfied	6 35.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 100.0	2 40.0	1 33.3	1 20.0	11 33.3
Very Satisfied	2 11.8	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 33.3	1 20.0	4 12.1
Column Total	11 51.5	0 0.0	0 0.0	1 3.0	0 0.0	1 3.0	1 3.0	5 15.2	3 9.1	5 15.2	33 100.0
33 valid cases 1 missing case											

Table(6.5): Type of Previous Dwelling and Satisfaction with Surroundings - New Settlement

	Courtyard House	Multi-storey Flat	Other Flat	Terraced House	Semi-detached House	Detached House	Maisonette	Cottage	Farm	Others	Row Total
Very Dissatisfied	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 33.3	0 0.0	0 0.0	0 0.0	0 0.0	1 4.2
Dissatisfied	2 18.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	2 8.3
Neither Satisfied nor Dissatisfied	3 27.3	1 33.3	1 25.0	1 50.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 100.0	6 25.0
Satisfied	5 45.5	1 33.3	3 75.0	1 50.0	0 0.0	2 66.7	0 0.0	0 0.0	0 0.0	0 0.0	12 50.0
Very Satisfied	1 9.1	1 33.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.0	3 12.5
Column Total	11 45.8	3 12.5	4 16.7	2 8.3	0 0.0	3 12.5	0 0.0	0 0.0	0 0.0	1 4.2	24.0 100.0
24 valid cases 0 missing case											

-Integer numbers represent the number of cases
-Decimal numbers represent the percentages

Table(6.7): Satisfaction with Dwellings and Length of Residence - New Settlement

	Less than 1 year	1 to 2 years	2 to 5 years	5 to 10 years	More than 10 years	Row Total
Very Dissatisfied	0 0.0	1 25.0	0 0.0	0 0.0	0 0.0	1 4.2
Dissatisfied	0 0.0	2 50.0	0 0.0	0 0.0	0 0.0	2 8.3
Neither Satisfied nor Dissatisfied	0 0.0	0 0.0	5 38.5	1 25.0	1 100.0	7 29.2
Satisfied	1 50.0	1 25.0	7 53.8	3 75.0	0 0.0	12 50.0
Very Satisfied	1 50.0	0 0.0	1 7.7	0 0.0	0 0.0	2 8.3
Column Total	2 8.3	4 16.7	13 54.2	4 16.7	1 4.2	24 100.0

24 valid cases 0 missing case

Table(6.6): Satisfaction with Dwellings and Length of Residence - Old Settlement

	Less than 1 year	1 to 2 years	2 to 5 years	5 to 10 years	More than 10 years	Row Total
Very Dissatisfied	0 0.0	0 0.0	0 0.0	0 0.0	5 16.7	5 14.7
Dissatisfied	0 0.0	0 0.0	0 0.0	0 0.0	6 20.0	6 17.6
Neither Satisfied nor Dissatisfied	0 0.0	0 0.0	1 100.0	1 33.3	11 36.7	13 38.2
Satisfied	0 0.0	0 0.0	0 0.0	2 66.7	6 20.0	8 23.5
Very Satisfied	0 0.0	0 0.0	0 0.0	0 0.0	2 6.7	2 5.9
Column Total	0 0.0	0 0.0	1 2.9	3 8.8	30 88.2	34 100.0

34 valid cases 0 missing case

- Integer numbers represent the number of cases
- Decimal numbers represent the percentages

Table(6.8): Satisfaction with Surroundings and Proximity of Relatives - New Settlement

	Relatives in same block	Relatives in same neighbourhood	Relatives in same street	Relatives elsewhere	Row Total
Very Dissatisfied	0 0.0	0 0.0	0 0.0	2 9.5	2 8.3
Dissatisfied	0 0.0	0 0.0	1 50.0	3 14.3	4 16.7
Neither Satisfied nor Dissatisfied	0 0.0	1 50.0	1 50.0	4 19.0	6 25.0
Satisfied	0 0.0	1 50.0	0 0.0	12 57.1	12 50.0
Very Satisfied	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Column Total	0 0.0	2 8.3	2 8.3	21 87.5	24 100.0
24 valid cases	0 missing case				

Table(6.9): Satisfaction with Surroundings and Proximity of Relatives - Old Settlement

	Relatives in same block	Relatives in same neighbourhood	Relatives in same street	Relatives elsewhere	Row Total
Very Dissatisfied	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Dissatisfied	0 0.0	0 0.0	0 0.0	3 17.6	3 7.5
Neither Satisfied nor Dissatisfied	1 100.0	10 52.6	1 33.3	5 29.4	17 42.5
Satisfied	0 0.0	8 42.1	1 33.3	7 41.2	16 40.0
Very Satisfied	0 0.0	1 5.3	1 33.3	2 11.8	4 10.0
Column Total	1 2.5	19 47.5	3 7.5	17 42.5	40 100.0
32 valid cases	2 missing cases				
	- Integer numbers represent the number of cases				
	- Decimal numbers represent the percentages				

Table(A3.1):A SAMPLE FROM THE DATAFILE
Table

11 1121311402201011001000082510101003439911220232040237060506015
12 100111110100000000000009999999999999999991001100000001110000000001310100101
13 00100000001001110000000000999999991001000100000000000001100001
14 001010000000000000999949999999931222112100001000000010000

21 1131331401200110300100092510101002219912023232340237060506025
22 300011110001000000000001100000010001000001000010000000011000000001499999999
23 99999990001101110001000001100000111001000100100000001001000002
24 1000100000000000009999499999999322121121000088888888888888

31 1121233401100010110010061510101002519912020202020207060506050
32 3000000188888888888888881100000010000000001000001000000000100010000599999999
33 999999900011010100000000009999999910010001000000000001001000001
34 8888888888888888880999949999999932212111001001000000111000

41 1121113300200010300010072550100011311911020202020200060506025
42 3000111088888888888888881100000888888888881100001000010000001999999499999999
43 99999990001001010000000001100000001001001000000000000100000001
44 1110000000000000010004499999999321230099999888888888888888

51 1111111411010000101100063310101003299911020202040207060502020
52 30001000010010000000000110000088888888888810100000000000001019999999999999999
53 99999990011001010010100001000000010888888888888888880001000001
54 0010000000000000011004499999999321230099999888888888888888

61 1131211401000000010100031520100012212911030202340307060506050
62 3000100001000000000000010100000100001000009999999999999999991999999300000100
63 99999991011001010000000001000000111001000000000000000100000001
64 0000100000000000009999499999999322120099999888888888888888

FILE HANDLE COMDATA/NAME='GHARDAIA'

TITLE 'FREQUENCIES1'

DATA LIST FILE=COMDATA RECORDS=4

/ 1 ID 1-2 RECORDS 3

V1 5-5 V2 6-6 V3 7-7 V4 8-8 V5 9-9 V6 10-10 V7 11-11
V8 12-12 V9M1 TO V9M7 13-19 V9F1 TO V9F7 20-26 V9HS 27-28
V10 29-29 V11 30-30 V12 31-31 V13 32-33 V14R1 TO V14R4 34-37
V15 38-38 V16H 39-39 V16O1 TO V16O3 40-42 V17 43-43
V19P1A 44-44 V19P1B 45-45 V19P2A 46-46
V19P2B 47-47 V19P3A 48-48 V19P3B 49-49 V19P4A 50-50 V19P4B 51-51
V19P5A 52-52 V19P5B 53-53 V19P6A 54-54 V19P6B 55-55 V19P7A 56-56
V19P7B 57-57 V19P8A 58-58 V19P8B 59-59 V19P9A 60-60 V19P9B 61-61
V19P10A 62-62 V19P10B 63-63 V19P11A 64-64 V19P11B 65-65

/ 2 V20 5-5 V21R1 TO V21R7 6-12 V22R1 TO V22R15 13-27

V23R1 TO V23R7 28-34 V24R1 TO V24R11 35-45 V25 46-46
V26R1 TO V26R10 47-56 V27R1 TO V27R7 57-63 V28 64-64
V29R1 TO V29R6 65-70 V30 71-71 V31R1 TO V31R8 72-79

/ 3 V32R1 TO V32R7 5-11 V33R1 TO V33R8 12-19 V34R1 TO V34R10 20-29

V35 30-30 V36R1 TO V36R8 31-38 V37 39-39 V38R1 TO V38R17 40-56
V39R1 TO V39R9 57-65 V40 66-66

/ 4 V41R1 TO V41R16 5-20 V42 21-21 V43R1 TO V43R4 22-25

V44 26-26 V45R1 TO V45R8 27-34 V46 35-35 V47 36-36
V48 37-37 V49 38-38 V50 39-39 V51 40-40 V52 41-41
V53R1 42-42 V53R21 TO V53R24 43-46 V54 47-47 V55R1 TO V55R6 48-53
V56R1 TO V56R7 54-60

MISSING VALUES V16H TO V16O3(9) V19P1A TO V19P11B(0) V21R1 TO V21R7(9)

V22R1 TO V22R15(9,8) V23R1 TO V23R7(9) V24R1 TO V24R11(9,8)
V26R1 TO V27R7(9,8) V29R1 TO V29R6(9) V31R1 TO V31R8(9)
V32R1 TO V32R7(9,8) V33R1 TO V33R8(9) V34R1 TO V34R10(9,8)
V36R1 TO V36R8(9) V38R1 TO V39R9(9,8) V41R1 TO V41R16(9,8)
V43R1 TO V43R4(9) V45R1 TO V45R8(9,8) V53R1 TO V56R7(9,8)

VARIABLE LABELS V1 'LOCATION'

V2 'T.HOUSING'
V3 'T.STREET'
V4 'T.DWELLING'
V5 'RELATION STREET.DWELLING'
V6 'NO.KITCHEN'
V7 'NO.LIVING-ROOM'
V8 'NO.BEDROOM'
V9M1 'NO.MALE'
V9F1 'NO.FEMALE'
V9HS 'HOUSEHOLD SIZE'
V10 'T.HOUSEHOLD'
V11 'TIME AT PRE ADDR'
V12 'LOC OF PRE RESIDENCE'
V13 'T.PRE DWELLING'
V14R1 'M OF FAM OUT DW'
V15 'TENURE'
V16H 'OCCUPATION HEAD'
V16O1 'OCCUPATION OTHERS'
V17 'CAR OWNER'
V19P1A 'PL TO PREPARE MEALS'
V19P2A 'PL TO HAV MEALS'
V19P3A 'PL TO WASH'
V19P4A 'PL FOR TV'
V19P5A 'PL FOR M.GUEST'

V19P6A 'PL FOR F.GUEST'
V19P7A 'PL FOR CHILD RECREA'
V19P8A 'PL TO SLEEP IN SUMMER PARENT'
V19P9A 'PL TO SLEEP IN WINTER PARENT'
V19P10A 'PL TO SLEEP IN SUMMER CHILD'
V19P11A 'PL TO SLEEP IN WINTER CHILD'
V20 'SATIS WITH DWELLING'
V21R1 'WHAT MAKES DISSATIS WITH DW'
V22R1 'WHY DISSATIS WITH DW'
V23R1 'WHAT MAKES SATIS WITH DW'
V24R1 'WHY SATIS WITH DW'
V25 'ANY ROOM USED WRONG'
V26R1 'T.ROOM USED WRONG'
V27R1 'WHY THE MISUSE'
V28 'DOES DW FULFILLS PRIV NEEDS'
V29R1 'WHY NO PRIV'
V30 'SATIS WITH SUR'
V31R1 'WHAT MAKES DISSATIS WITH SUR'
V32R1 'WHY DISSATIS WITH SUR'
V33R1 'WHAT MAKES SATIS WITH SUR'
V34R1 'WHY SATIS WITH SUR'
V35 'ANY MODIF TO DW'
V36R1 'KIND OF MODIF'
V37 'CH LIKED BUT CANNOT DO'
V38R1 'KIND OF CH'
V39R1 'WHY IMPOSSIBLE'
V40 'IMPORTANCE OF COURT'
V41R1 'WHY IS IT IMPORTANT'
V42 'ANY ACT STOP'
V43R1 'KIND OF ACT STOP'
V44 'RES ENVT INF ON LIFE'
V45R1 'WHAT WAYS'
V46 'T.LOG'
V47 'PARKING'
V48 'TERRACE'
V49 'OPENINGS'
V50 'SALON'
V51 'HEARD OF ATELIER MZAB'
V52 'CONTACT PLAN AUTHO'
V53R1 'TIME OF CONTACT'
V53R21 'CIRCUMSTANCE OF CONTACT'
V54 'RESPECT PLANNING LAW'
V55R1 'WHY NO RESPECT'
V56R1 'ATTITUDES TO PLANNING SYSTEM'
VALUE LABELS V1 1 'ANCIEN MOUDJAH' 2 'SIDI ABBAZ TWO' 3 'SIDI ABBAZ ONE' /
V2 1 'TRAD' 2 'NEW' /
V3 1 'CHARAA' 2 'TAHAMELT' 3 'DRIBA' /
V4 1 'COURT HOUSE' 2 'FLAT GROUND' 3 'FLAT FIRST' /
V5 1 'P.PR' 2 'P.SP.PR' 3 'P.SP.SPR.PR' /
V10 1 'NUCLEAR FAM' 2 'EXTENDED FAM' 3 'OTHERS' /
V12 1 'KSAR' 2 'NEW EXTENSION' 3 'RUR SETT VAL' 4 'TOWN ELSEWHERE'
5 'RUR SETT ELSEWHERE' 6 'DO NOT KNOW' /
V13 01 'COURT HOUSE' 02 'MULTI-ST FLAT' 03 'OTHER FLAT' 04 'TERRACE HOUSE'
05 'S.DET HOUSE' 06 'DET HOUSE' 07 'MAISONETTE' 08 'COTTAGE' 09 'FARM'
10 'OTHERS' /
V16H 1 'PROFESSIONALS' 2 'SKILLED' 3 'UNSKILLED' 4 'SMALL RETAILER'
5 'RETIRED' 6 'UNEMPLOYED' /
MULT RESPONSE GROUPS=COSDWDIS 'CAUSES OF DW DISATISFACTION' (V21R1 TO V21R7(1
WYARUDIS 'WHY ARE YOU DISSATISFIED' (V22R1 TO V22R15(1))
COSDWSAT 'CAUSES OF DWELLING SATISFACTION' (V23R1 TO V23R7(1))

WYARUSAT 'WHY ARE YOU SATISFIED' (V24R1 TO V24R11(1))
 PROXREL 'PROXIMITY OF RELATIVES' (V14R1 TO V14R4(1))
 MISUSROO 'MISUSED ROOMS' (V26R1 TO V26R10(1))
 WYMISUSE 'WHY THE MISUSE' (V27R1 TO V27R7(1))
 WYNOPRIV 'WHY NO PRIVACY' (V29R1 TO V29R6(1))
 COSSRDIS 'CAUSES OF SURROUNDINGS DISSATISFACTION' (V31R1 TO V31R8(1))
 VARIABLES=V10(1,3) V12(1,6) V13(01,10) V15(1,6) V16H(1,6) V17(1,2)
 V20(1,5) V25(0,1) V28(0,1) V30(1,5) V35(0,1) V37(0,1) V42(0,1) V44(1,5)
 V46(1,3) V47(1,3) V48(1,3) V49(1,3) V50(1,3)
 V11(1,6) V40(1,5) /
 TABLES=V20 V30 V46 V47 V48 V49 V50 BY PROXREL V25 V11 V10 V12 V13 V15 V28
 FINISH

PROGRAM TO GENERATE A BARGRAPH (graph no.6.6 in the thesis)

```
*PLOTARM PLOTTER
*GRAPHICS
  *BARGRAPH PAGESIZE=25,20
  ORIGIN=2
  XLENGHT=18
  GROUPS=2
  DATA=0,2.9,8.3,11.8,91.7,85.3,0,0,25,23.5,66.7,76.5,8.3,0,0,0,12.5,8.8,87.5,
  91.2,0,0,70.8,52.9,29.2,47.1,0,0,0,2.9,87.5,82.4,12.5,14.7
  SHADEGRP 2,4
  TITLE 'HOUSING PREFERENCES'
  XTITLE 'ELEMENTS SELECTED (SEE KEY)'
  YTITLE 'FREQUENCY IN %'
  XMIN=1 XMAX=18 XUNITS=1
  YMIN=0 YMAX=95 YUNITS=10
  INSET=1
  *END

*STOP
R *GIMMS 5=GIMMS5 9=T
R *MTSPLOT SCARDS=-T PAR=SCALE=0.5
SIG
```

PROGRAM TO GENERATE A PIE (graph no.6.2 in the thesis)

```
*PLOTARM PLOTTER
*GRAPHICS
  *NEWPAGE 20,20 FRAME
  *PIE XCENTRE=10 YCENTRE=10 RADIUS=5
  DATA=70.6,29.4
  SHADING=4,0
  *TEXT X=1 Y=3 '% OF PEOPLE SATISFIED WITH PRIVACY'
  *TEXT X=4 Y=2 'OLD HOUSING AREA'
  *END
*STOP
R *GIMMS 5=G71 9=R
R *MTSPLOT SCARDS=-R
SIG
```

**DAMAGED
TEXT
IN
ORIGINAL**

THE UNIVERSITY OF NEWCASTLE UPON TYNE

DEPARTMENT OF TOWN & COUNTRY PLANNING

THE UNIVERSITY

TELEPHONE NEWCASTLE (0632) 328511 EXT 2807 NEWCASTLE UPON TYNE NE1 7RU

JHS/JP

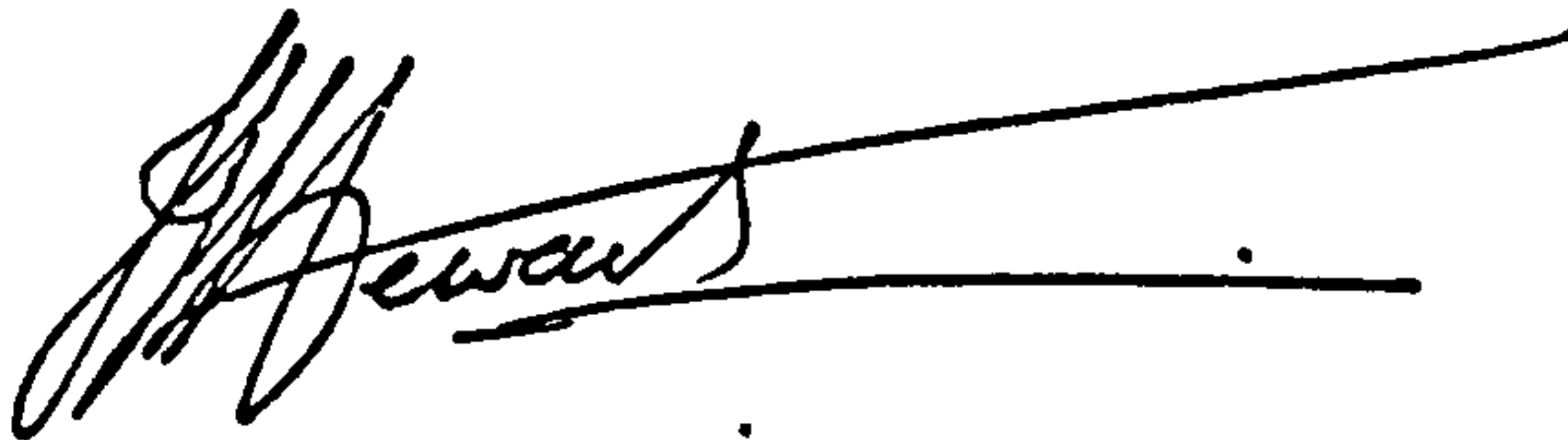
17 Juillet 1986

Monsieur,

Permettez moi de solliciter de votre haute bienveillance de bien vouloir assister une de nos étudiantes dans sa recherche. Mrs Naima Chabbi (épouse Chemrouk) est en ce moment entrain d'accomplir sa thèse de "Doctorat D'Etat", et aurait besoin de mener une enquête sur terrain dans votre région durant le moins d'Aout.

Le thème de recherche étant "LA CULTURE ET SON INFLUENCE SUR LA FORMATION ET L'EVOLUTION DE L'HABITAT", votre région a été sélectionnée non seulement pour la richesse de son patrimoine urbain et architectural, mais aussi comme étant l'une des rares régions d'Algerie qui a sût sauvegarder son riche cachet traditionnel. En étudiant les différentes typologies traditionnelles ainsi que les réalisations actuelles de la région, Mrs Chabbi a pour objectif d'utiliser le patrimoine Algerien comme un référence architecturale et urbaine pour la production d'un logement de masse dont les normes de construction répondent aux besoins socio-culturels de la famille Algerienne.

Je vous remercie très chaudement pour votre aimable coopération et vous assure qu'en aidant Mrs Chabbi vous aurez non seulement contribué à l'accomplissement d'un travail personnel qui aurait été inachevable sans votre assistance, mais vous aurez aussi participer activement à L'amélioration du logement de masse dans votre pays. Veuillez Monsieur, accepter mes remerciements encoure une fois.



Mr J.H. Stewart,
Directeur des etudes.

Aux Autoritees Concernees,
Ville de Ghardaia,
Valley du M'zab,
Algerie.



PHYSICAL DESCRIPTION.

Photographic survey	
Film no.	Pict no.

1-Location:

Area: Street: No. on map: []

2-Type of housing:

- | | |
|-----------------------------|-----|
| 1-Traditional | [] |
| 2-New public housing estate | [] |

3-Type of street:

- | | |
|------------|-----|
| 1-Charaa | [] |
| 2-Tahamelt | [] |
| 3-Driba | [] |

4-Type of dwelling:

- | | | |
|-------------------------------------|-----|-----------------|
| 1-Courtyard house | [] | |
| 2-Flat in a bloc of 2-4 storeys | [] | [] (floor no.) |
| 3-Flat in a block of over 4 storeys | [] | [] |

5-Relationship between dwelling and street:

- | | |
|---|-----|
| 1-public/private | [] |
| 2-public/semi-public/private | [] |
| 3-public/semi-public/semi-private/private | [] |

6-Number of kitchens:

1-One [] 2-Two [] 3-More than two []

7-Number of living rooms:

1-One [] 2-Two [] 3-More than two []

8-Number of bedrooms

1-One [] 2-Two [] 3-Three [] 4-More than three []

HOUSEHOLD'S CHARACTERISTICS.

9-Household size and structure:

	Male	Female
1-Elderly (60 years+)		
2-Adults (19-59 years)		
3-Children (0-18)		
4-Total		

10-Household type:

1-Nuclear family	
2-Extended family	
3-Others (specify)	

11-Time at present address:

1-Less than one year	
2-(1 to 2) years	
3-(2 to 5) years	
4-(5 to 10) years	
5-More than 10 years	
6-Do not know	

12-Locality of previous residence:

1-Ksar in the valley	
2-New extensions in the valley	
3-Rural settlement in the valley	
4-Town elsewhere	
5-Rural settlement elsewhere	
6-Do not know	

13-Type of previous dwelling:

1-Courtyard house	<input type="checkbox"/>	2-Multi-storey flat	<input type="checkbox"/>
3-Other flat	<input type="checkbox"/>	4-Terrace house	<input type="checkbox"/>
5-Semi-detached house	<input type="checkbox"/>	6-Detached house	<input type="checkbox"/>
7-Maisonette	<input type="checkbox"/>	8-Cottage	<input type="checkbox"/>
9-Farm	<input type="checkbox"/>	10-Others.....	<input type="checkbox"/>

14-Members of the family outside dwelling:

1-In the same block	<input type="checkbox"/>	2- In the same neighbourhood	<input type="checkbox"/>
3-In the same street	<input type="checkbox"/>	4-Elsewhere(specify).....	<input type="checkbox"/>

15-Tenure:

1-Owner occupier	<input type="checkbox"/>	2-Local authority rented	<input type="checkbox"/>
3-Family owned	<input type="checkbox"/>	4-Occupied by virtue of employment	<input type="checkbox"/>
5-Privately rented	<input type="checkbox"/>	6-Others.....	<input type="checkbox"/>

16-Employment:

1-Job description for head.....

2-Job description for others(specify).....

.....

.....

.....

17-Car ownership:

1-No car	<input type="checkbox"/>	2-One car	<input type="checkbox"/>
3-Two cars	<input type="checkbox"/>	4-More than two	<input type="checkbox"/>

PRINCIPLES OF SPACE USE IN THE HOUSEHOLD.

| Photographic survey |

| Film no. | Pict no. |

| 18-Analysis of the different arrangements and groupings of furniture.

| Schematic layout of dwelling with different groupings of furniture.

| 19- Which places do you use for:

| 1-Preparing meals?

| 2-Having meals?

| 3-Washing?

| 4-Sitting, knitting, radio, tv, etc?

| 5-Receiving male guests?

| 6-Receiving female guests?

| 7-Children's recreation?

| 8-Sleeping (parents)

| 9-Sleeping (children)

PLACE SATISFACTION: Dwellers' attitudes towards their dwelling and its surroundings.

20-How satisfied are you with your dwelling?

1-Dissatisfied

2-Very dissatisfied

3-Neither satisfied nor dissatisfied

4-Satisfied

5-Very satisfied

21-Can you tell me what makes you dissatisfied?

1-Location

3-Layout

5-Aspect (external)

7-Others.....

2-Accessibility

4-Size

6-Arrangement of rooms

22-Why?

23-Can you tell me what makes you satisfied with your dwelling?

1-Location

3-Layout

5-Aspect (external)

7-Others.....

2-Accessibility

4-Size

6-Arrangement of rooms

24-Why?

25-Are there any rooms used for the wrong purpose? (e.g., cooking in the bedroom)?

1-Yes ☐

2- No ☐

26-If yes, which ones?

.....
.....

27-Why?

.....
.....

28-Does your dwelling fulfill your privacy needs?

1-Yes ☐

2- No ☐

29-If not, is it because:

1-People passing by can look in

☐

2-People in other houses can see in

☐

3-Can hear people from outside

☐

4-Can hear neighbours

☐

5-Can be heard by neighbours

☐

6-Others.....

☐

30-How satisfied are you with the surroundings of your dwelling?

1-Dissatisfied

☐

2-Very dissatisfied

☐

3-Neither satisfied nor dissatisfied

☐

4-Satisfied

☐

5-Very satisfied

☐

31-Can you tell me what makes you dissatisfied with the surroundings of your dwelling?

- 1-Layout of the area
- 2-Lack of parking facilities
- 3-Lack of recreational facilities
- 4-Lack of local shops
- 5-Lack of peace and quiete
- 6-Lack of places for infants and older children to play
- 7-Type of neighbours
- 8-Others.....

.....

32-Why?.....

.....

33-Can you tell me what makes you satisfied with the surroundings of your dwelling?

- 1-Layout of the area
- 2-Arrangements for parking facilities
- 3-Recreational facilities
- 4-Local shops
- 5-Peace and quiete
- 6-Enough places for infants and older children to play
- 7-Type of neighbours
- 8-Others.....

.....

34-Why?.....

.....

RESIDENTS' ATTEMPTS OR/AND DESIRES TO ALTER THEIR DWELLINGS.

35-Are there any modifications you carried out since you moved into this dwelling?

1-Yes : ☐

2-No : ☐

36-If yes, what are they?

1-Extra rooms ☐

2-Subdivision of rooms ☐

3-Addition of openings ☐

4-Elimination of openings ☐

5-Elimination of courtyard ☐

6-Extension of courtyard ☐

7-Conversion of rooms
(e.g., room changed into kitchen) ☐

8-Others..... ☐

37-Are there any changes you would like to carry out but cannot do?

1-Yes : ☐

2-No : ☐

38-If yes, what are they?.....

39-Why not?.....

40-Would you say that having a courtyard is

1-Very important ☐

2-Important ☐

3-Fairly important ☐

4-Does not matter ☐

5-Do not know ☐

41-Why?.....

42-Are there any activities you had to give up because you could no longer do them in this dwelling?

1-Yes : ☐

2-No : ☐

43-If yes, which ones ?

1-Preparing couscous

☐

2-Drying dates

☐

3-Going from house to house
by using the terraces

☐

4-Others.....

☐

.....

44-Do you think that changes in your residential environment have influenced your way of life?

1-Very much

☐

2-Little

☐

3-Very little

☐

4-Not at all

☐

5-Do not know

☐

45-In what ways?

.....

.....

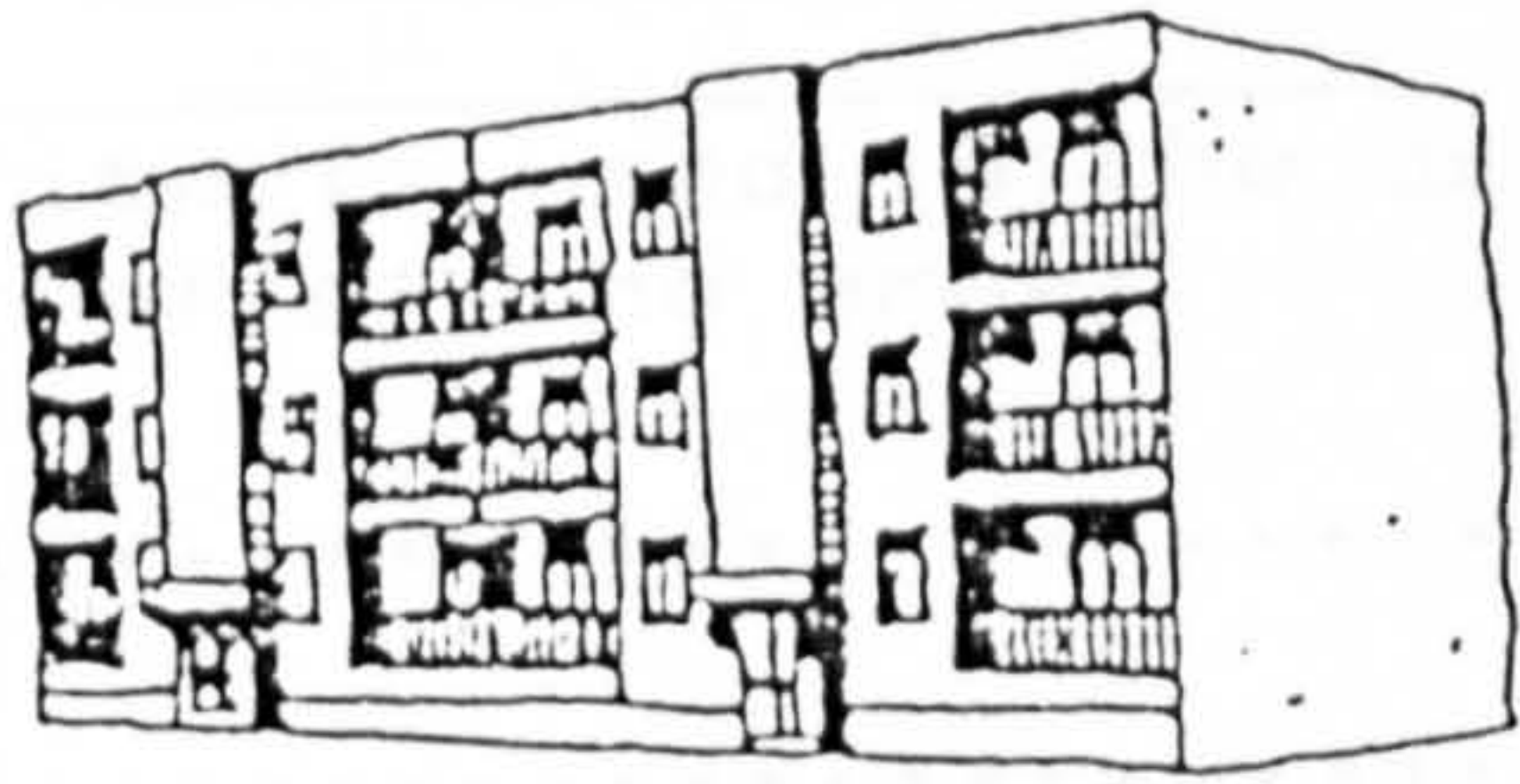
.....

.....

HOUSING PREFERENCE GAME.

- 46- Imagine that you have to move from your present dwelling.
You can afford to buy your own dwelling and still have 40000Dinars (3800 pounds) left.
Could you show me how you would spend the 40000Dinars to choose the dwelling the most suitable for your needs.
You can have extra elements in your dwelling (courtyard, garage, terrace, "mashrabyah" to your windows, a guest room for male visitors and another for female by spending 5000DA or 10000DA on any line as shown on the sketches.
Select the elements by putting a tick ☐ in the boxes provided.
Remember that you cannot spend more than 40000DA.

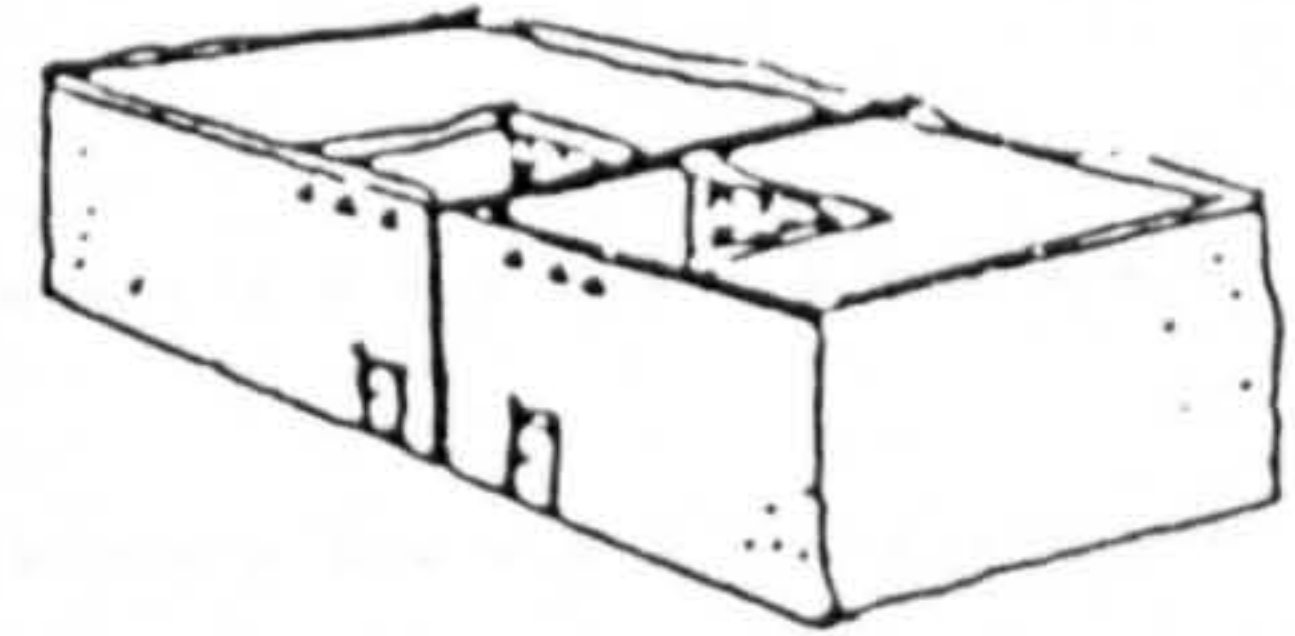
TYPE DE
LOGEMENT
نوع السكن



0 DA
1

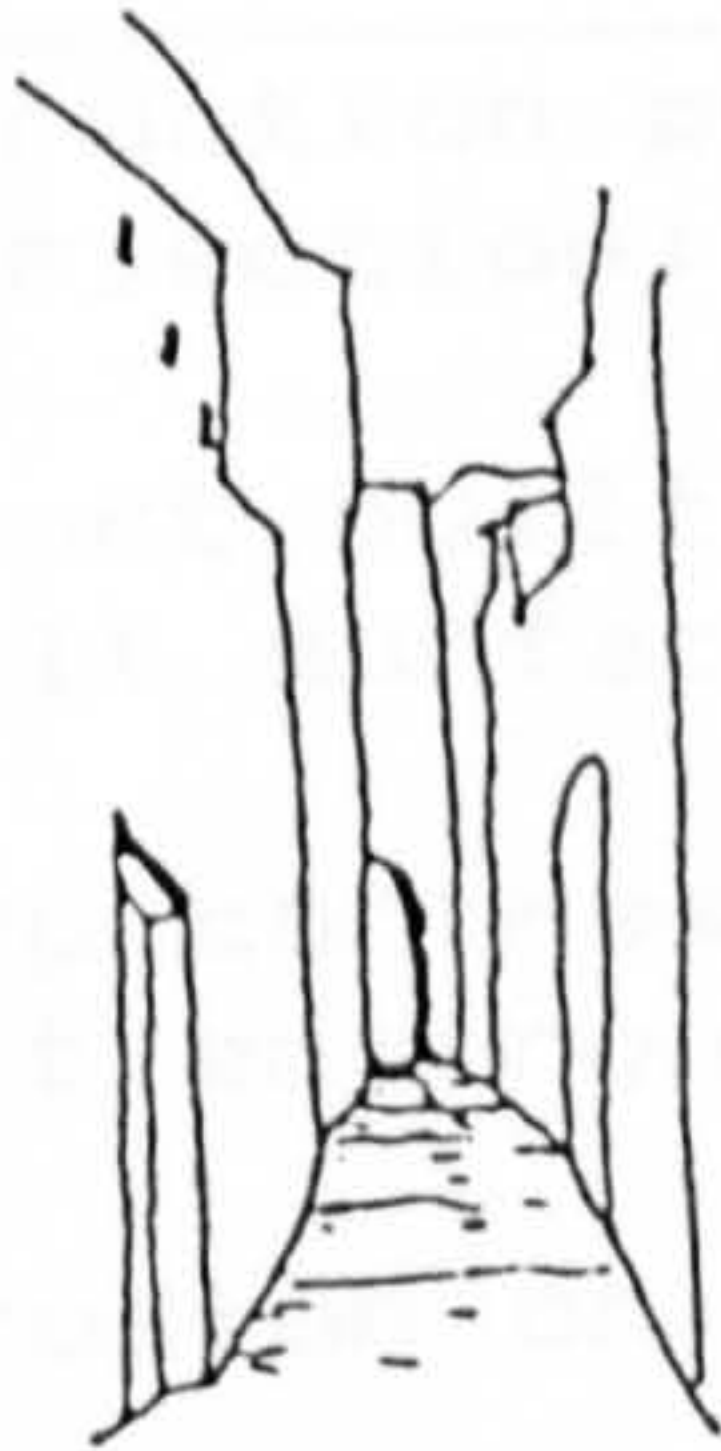


15 000 DA
2



20 000 DA
3

PARKING
ET
GARAGE
وقوف
السيارات
ومستودع



0 DA
1

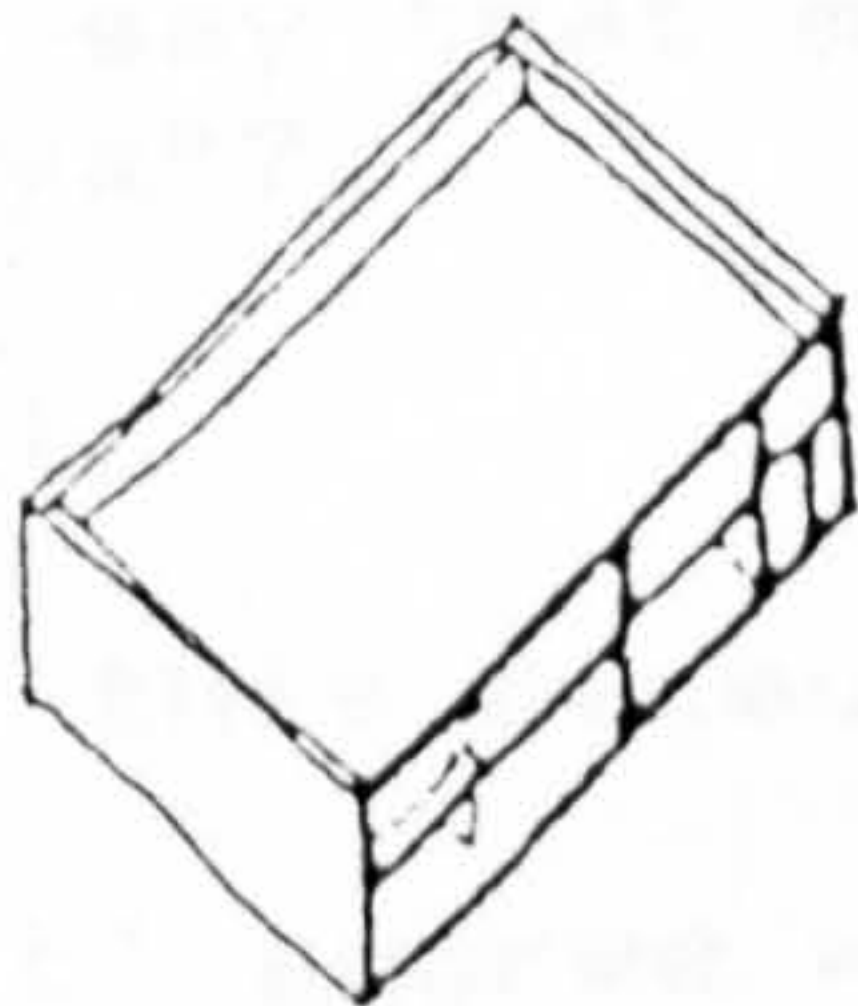


5 000 DA
2

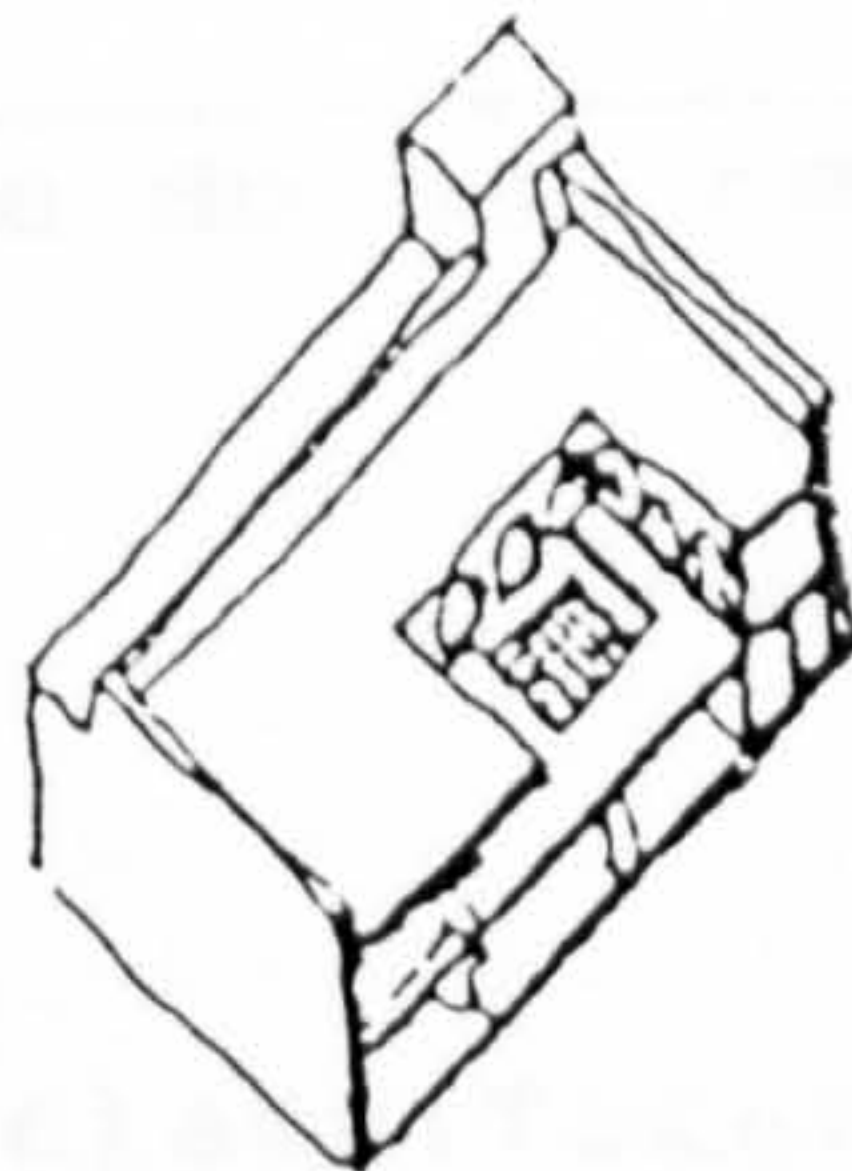


10 000 DA
3

TERRASSE
سطح

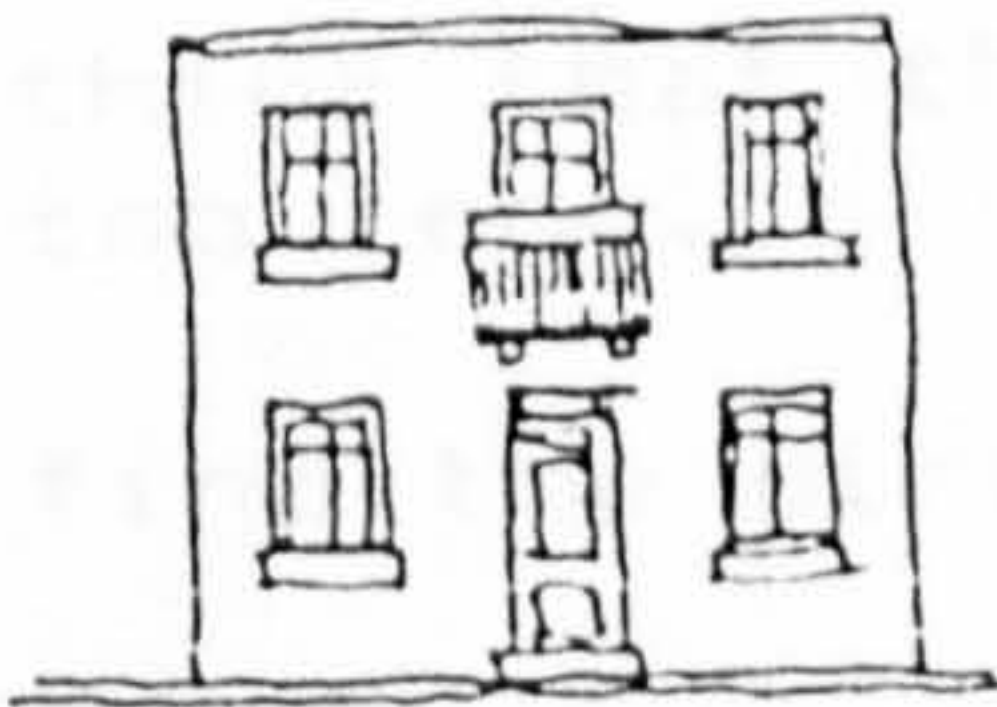


0 DA
1

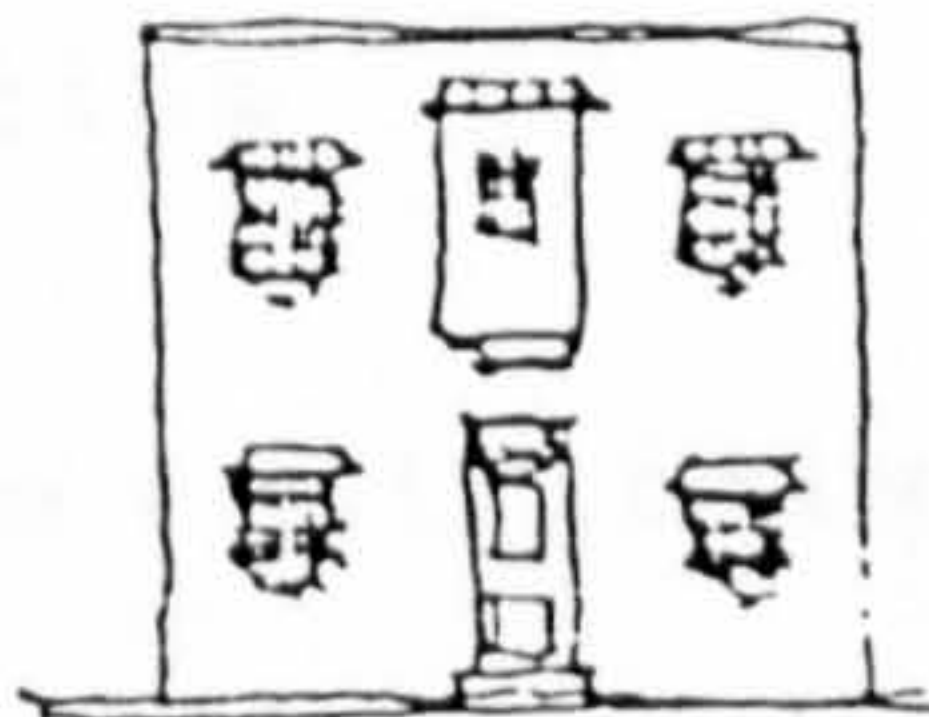


10 000 DA
2

FENETRES
ET
BALCONS
نوافذ
شرفى

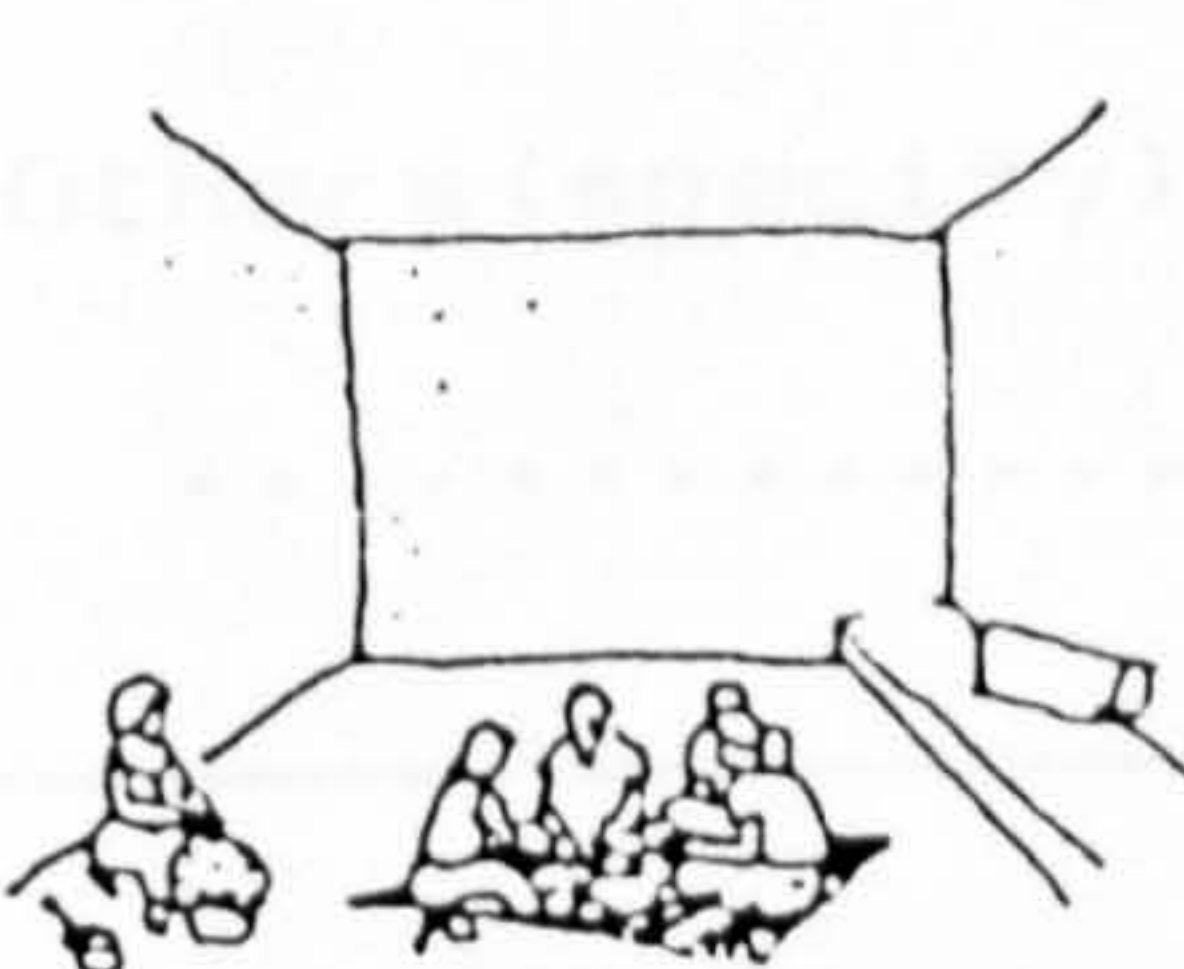


0 DA
1

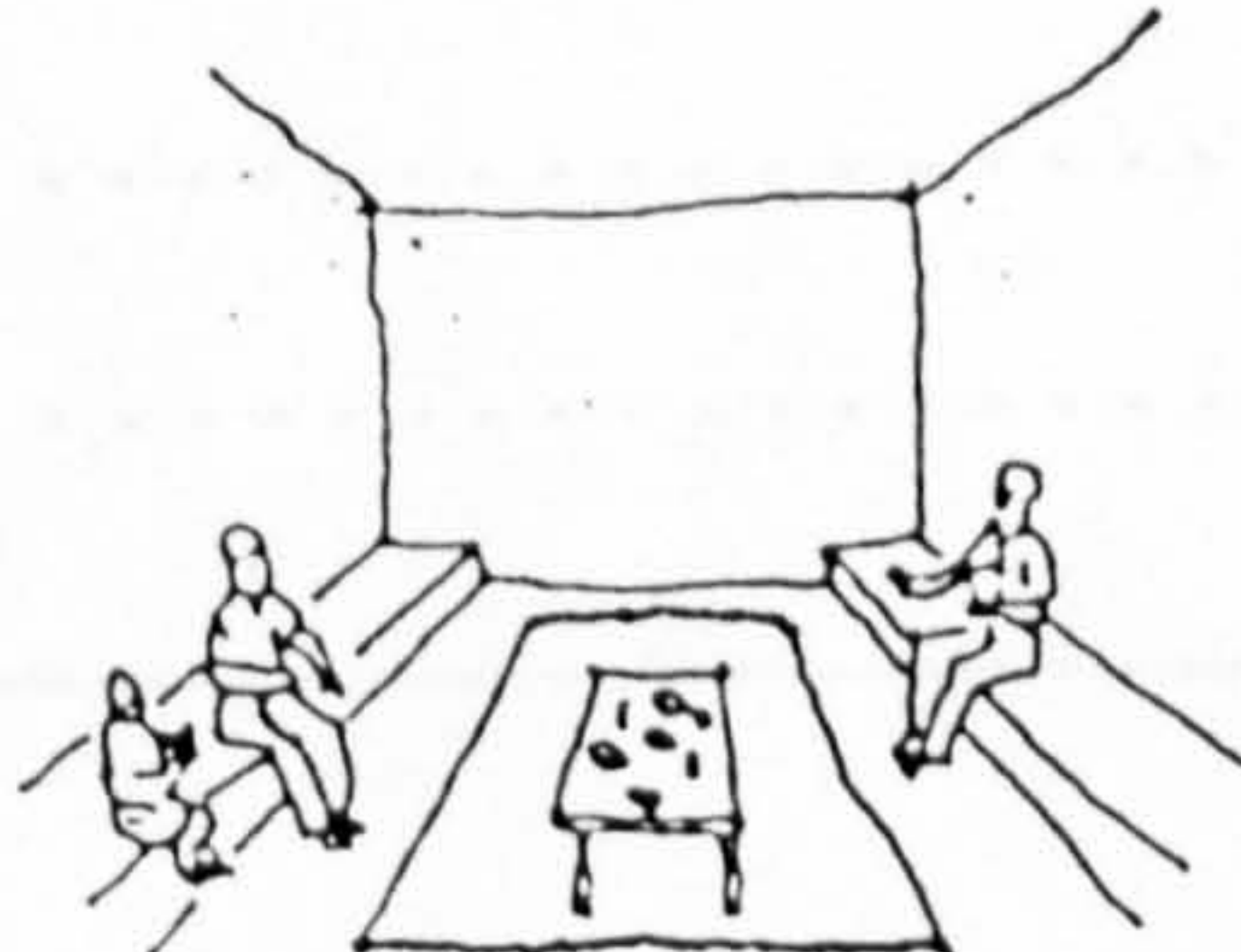


5 000 DA
2

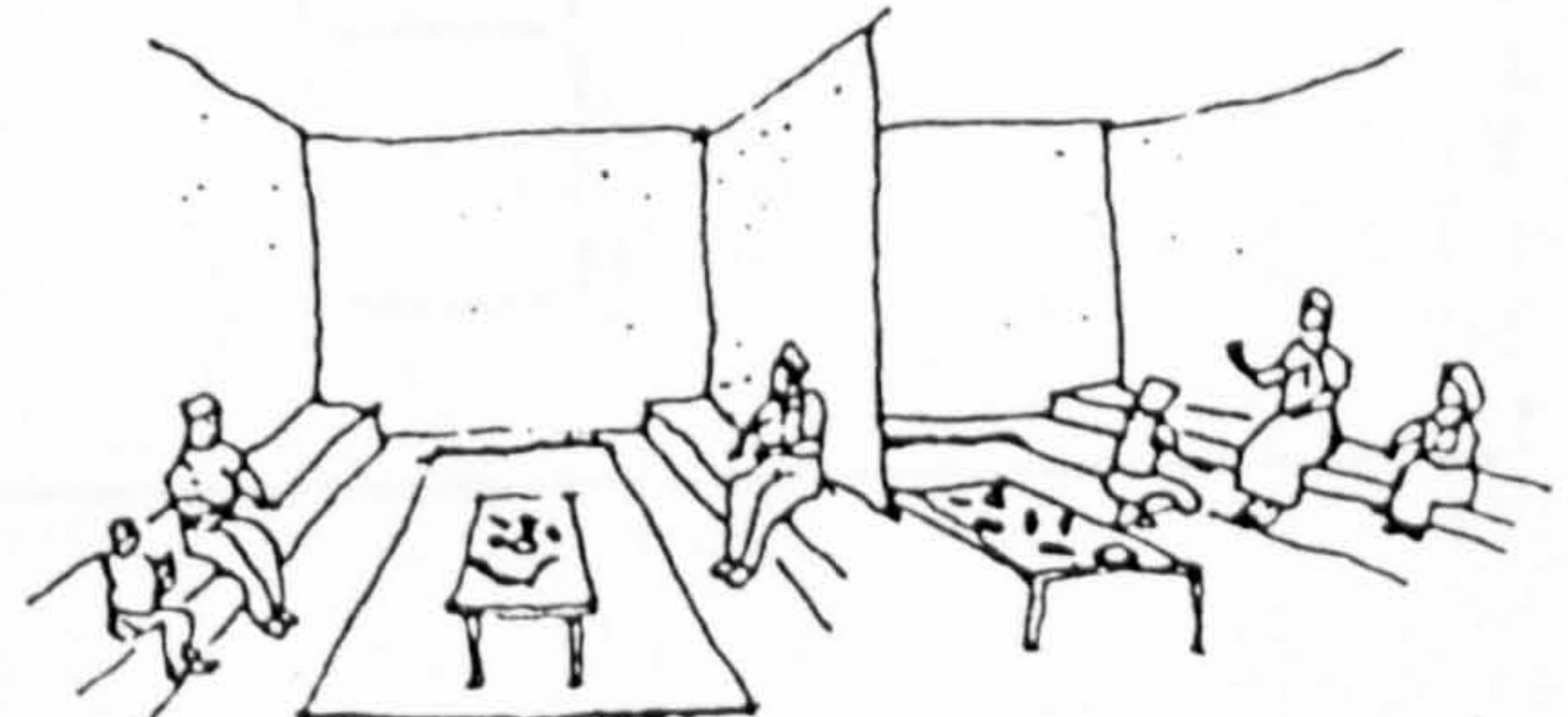
SALON
POUR
INVITES
بيت
الضيوف



0 DA
1



5 000 DA
2



10 000 DA
3

LOCAL PLANNING AUTHORITIES' ATTITUDES TOWARDS HOUSING.

47-Criteria used in the generation and formulation of the planning brief of the area:

.....
.....
.....

48-Construction permits for residential development, common reasons for rejection:

1-Rapport built/non-built not respected
(built surface exceeds norms)

☐

2-Sharp contrast with the historical
built environment

☐

3-Intrusion on neighbours' privacy

☐

4-others(specify).....

☐

.....

49-Would you say that most people do not respect the directives put by the "Wilaya"?

1-Yes : ☐

2-No : ☐

50-If yes is this because:

1-They dont' agree with the "classification"
of their city as a "historic site".

☐

2-They dont' see the necessity of
getting a construction permit.

☐

3-They think that the formalities
take too long.

☐

4-They find the directives too restrictive.

☐

5-They find the regulations and codes
too technical.

☐

6-They find the regulations devoid of
any cultural connotations.

☐

7-Others(specify).....

☐

.....

DWELLERS' ATTITUDES TOWARDS THE LOCAL PLANNING SYSTEM.

51-Have you ever heard about "L'Atelier du M'Zab"?

1-Yes ☐

2- No ☐

52-Have you ever had any contact with the planning authorities?

1-Yes ☐

2- No ☐

53-If yes,

1-When?.....

2-On what circumstances?.....

.....

54-For various reasons, many people do not strictly respect the directives put by the planning authorities; would you agree with those people?

1- Yes ☐

2- No ☐

55-Why?

.....

56-The following reasons are some of the many, people advanced to explain their attitudes towards the planning system in the area, would you agree with those who say:

1-They dont' aggree with the "classification" of their city as a"historic site".

☐

2-They dont' see the necessity of getting a construction permit.

☐

3-They think that the formalities take too long.

☐

4-They find the directives too restrictive.

☐

5-They find the regulations and codes too technical.

☐

6-They find the regulations devoid of any cultural connotations.

☐

7-Others(specify).....

☐

BUILDING CONSTRUCTORS' ASSESSEMENT OF THE PREVALENT HOUSING CONSTRUCTION PROCESS.

57-What kind of dwellings do you build most?

	Rank
1-Courtyard houses	<input type="text"/>
2-Multi-storey flats	<input type="text"/>
3-Semi-detached houses	<input type="text"/>
4-Terraced houses	<input type="text"/>
5-Detached houses	<input type="text"/>
6-Maisonnettes	<input type="text"/>
7-Others(specify)	<input type="text"/>

.....

58-Many people tend to alter the building's layout during the construction process, would you say that most of your clients

1-Try to make alterations during the construction	<input type="text"/>
2-Make alterations after delivery of the dwelling	<input type="text"/>
3-Follow strictly the original layout	<input type="text"/>
4-Do not know	<input type="text"/>

59-Why do you think people make these alterations?

.....
.....

60-Could you please enumerate in descending order the types of alterations commonly asked for:

.....
.....
.....
.....
.....

APPENDIX FOUR

A STUDY OF THE ALGERIAN FAMILY ACTIVITY PATTERNS

A4.1 PREPARING MEALS

Most of the Algerian dishes are time consuming and need a large space and numerous utensils in which to carry out preparation. Couscous, the national dish, needs a container or 'gasaa' of at least 60 cm diameter. Possessing a full set of 'gasaa' and other crockery is a very important criterion of good housekeeping; and most women display proudly their sets of copper trays. Food preparation is done in a sitting position. A 'meida' or low table is put in front of the housewife, and is used for chopping vegetables. The meal is most of the time cooked on a low stove which is also used to bake bread. This latter is cooked in a burnt clay dish or copper tray.

A4.2 HAVING MEALS

There are four meals a day - breakfast, lunch, afternoon coffee and supper. The 'meida' or low table is still widely used as it is easy to handle and to take wherever it is desired to eat. Usually, more than one person shares the same dish.

Tables and chairs are more and more used for eating purposes, specially by men or when having guests.

In the traditional house, there is no special place to eat in. Meals can be taken anywhere according to the time, the weather and the space available. However, the courtyard is usually more used than any other place. Even in the dwellings where dinner tables, chairs and dinning suites are widely available, the 'meida' is still commonly used, and 32.4% of the respondents use it to eat in the yard, while 40.5% use it in the kitchen. Despite their low intensity of use, the dining room and suite are highly valued by all the residents.

A4.3 WASHING DISHES

Washing dishes is also done in a sitting position using a special set of containers. All the respondents in the Quartier des Anciens Moudjahidines do their washing up in the coutyard.

In Sidi-Abbaz despite the fact that most of them use the kitchen, the majority said that because the kitchen's sink is too small, some dishes (e.g; those used for preparing couscous) have to be washed in the yard or veranda.

A4.4 WASHING CLOTHES

Because of the usually large size of the family and the religious beliefs(Islam encourages cleanliness and only clean clothes can be used for prayers which are done five times a day) washing clothes is almost a daily activity.

The washing is done in a sitting position, in a large container of about 90 centimetres of diameter. The women sits on a low wooden stool with a set of containers in front of her. Each container has a special function, some are used for washing, others for rinsing, and dripping. Carpets, blankets and other large items are spread on the floor and brushed with soapy water, then rinsed and let to drip.

A4.5 WASHING THE DWELLING'S FLOOR

The cleaning of the floor is done daily by the use of large quantities of soapy water. Every morning all mattresses, and carpets are taken into the courtyard or terrace and shaken out. They are left in the sunshine until the floor is cleaned and dried.

A4.6 BATHING

In the Quartier des Anciens Moudjahidines, almost all families do not have a specific place to bath in. The copper container, used for washing clothes is used to bath in and is placed in any convenient room.

Public baths or 'hammams' are widely used, and every family member goes at least once a week to the 'hammam'. Usually, men and elderly people go to the 'hammam' each Friday morning to be cleaned for the Friday prayer. Women and children go on monday afternoons (half day off school) or on week-ends. There are separate 'hammams' for the two sexes (Some 'hammams' are used by women during daytime and men during evenings). In Sidi-Abbaz where every dwelling has a bathroom, people still continue to go to the 'hammam', although at longer intervals.

A4.7 SLEEPING

There are few fixed beds in the traditional house. A double bed for each couple and few sofa beds which are also used for sitting purposes during day time. Mattresses are however, extensively used, either to sleep on the terrace or roof during the hot summer nights or in the bedrooms during the winter. Children usually sleep with their parents up to schoolage (5 to 6 years). In Sidi-Abbaz the whole family sometimes sleep in the living room which is the only

room having air conditionning.

A4.8 RELAXING

In the traditional settlement, the courtyard is the main place for relaxation. Most people use it to watch T.V, have their afternoon coffee, knit or weave while surveilling the children's play in the opposite skiffa.

In the new settlement, however, the backyard is not as much used, especially in the early afternoons when it is covered by the scorching sun. Instead, the children's room, or family living room is regularly used; and most people use it for watching T.V, knitting or machine sewing.

A4.9 RECEIVING GUESTS

Islam, which is associated with good hospitality but highly values privacy, favours the idea of a separate room for guests. Thus, most residents still reserve a room for the male visitors.

In the traditional house, this room, although integrated with the core of the dwelling, functions quite separately. In the modern settlement, male visitors are usually received in the formal living room or the western style furnished living room .

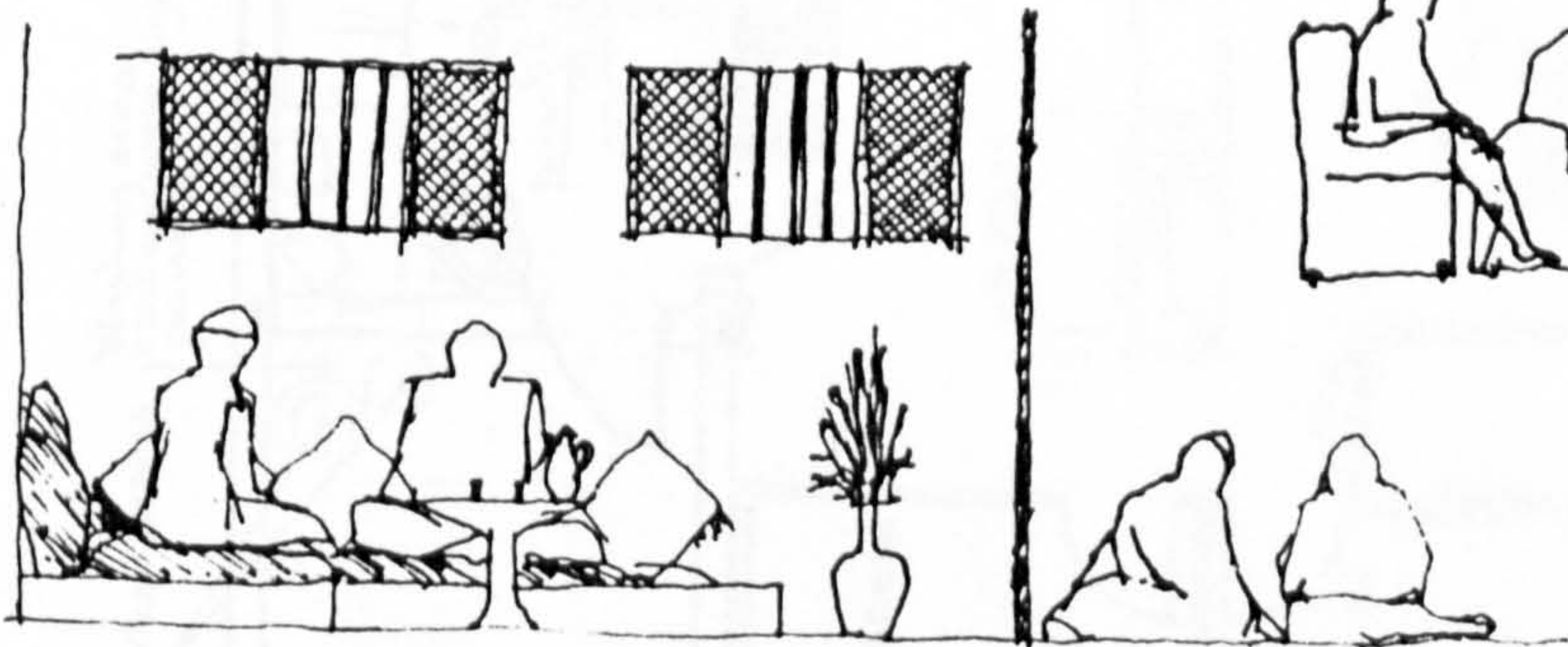
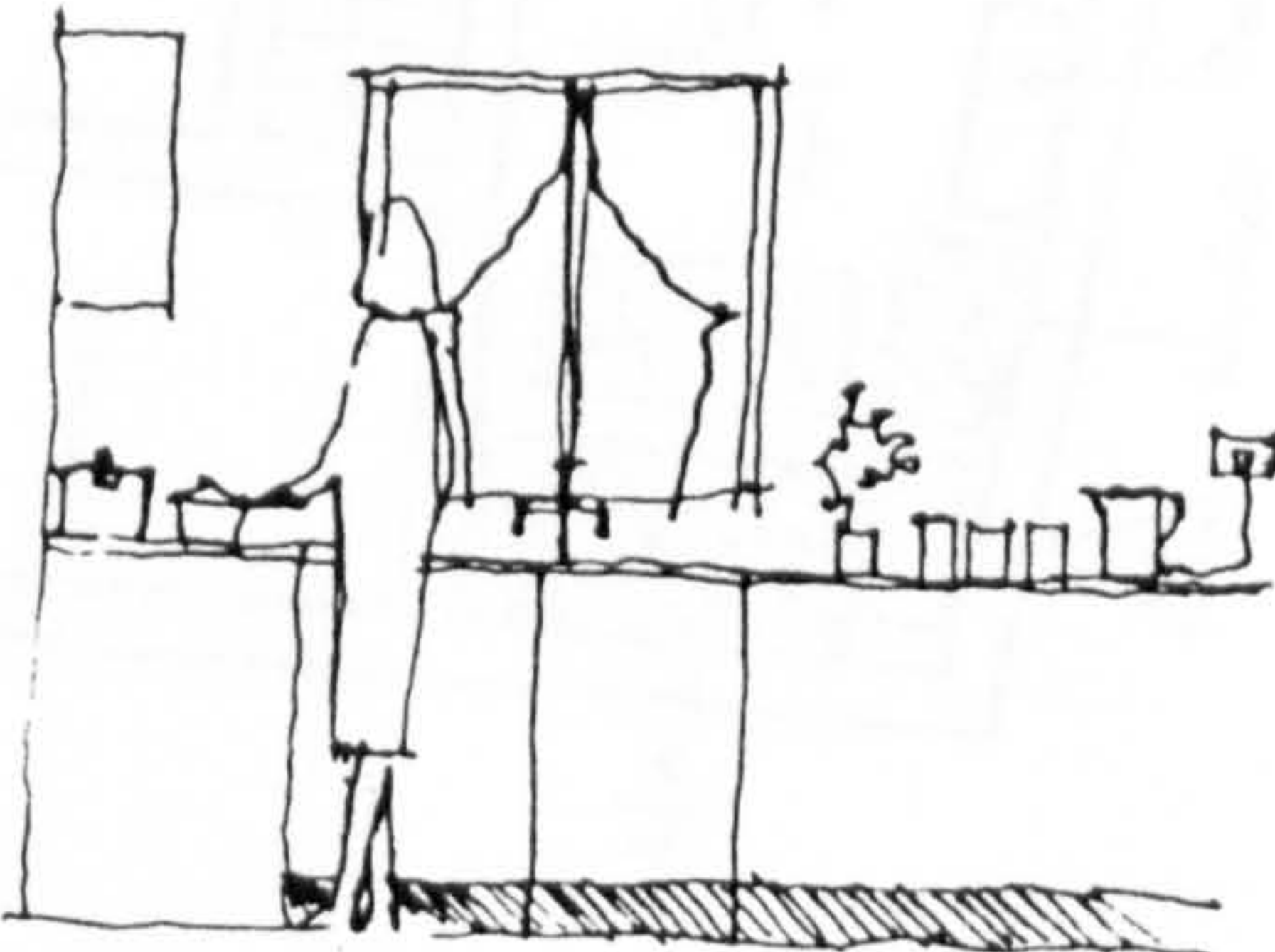
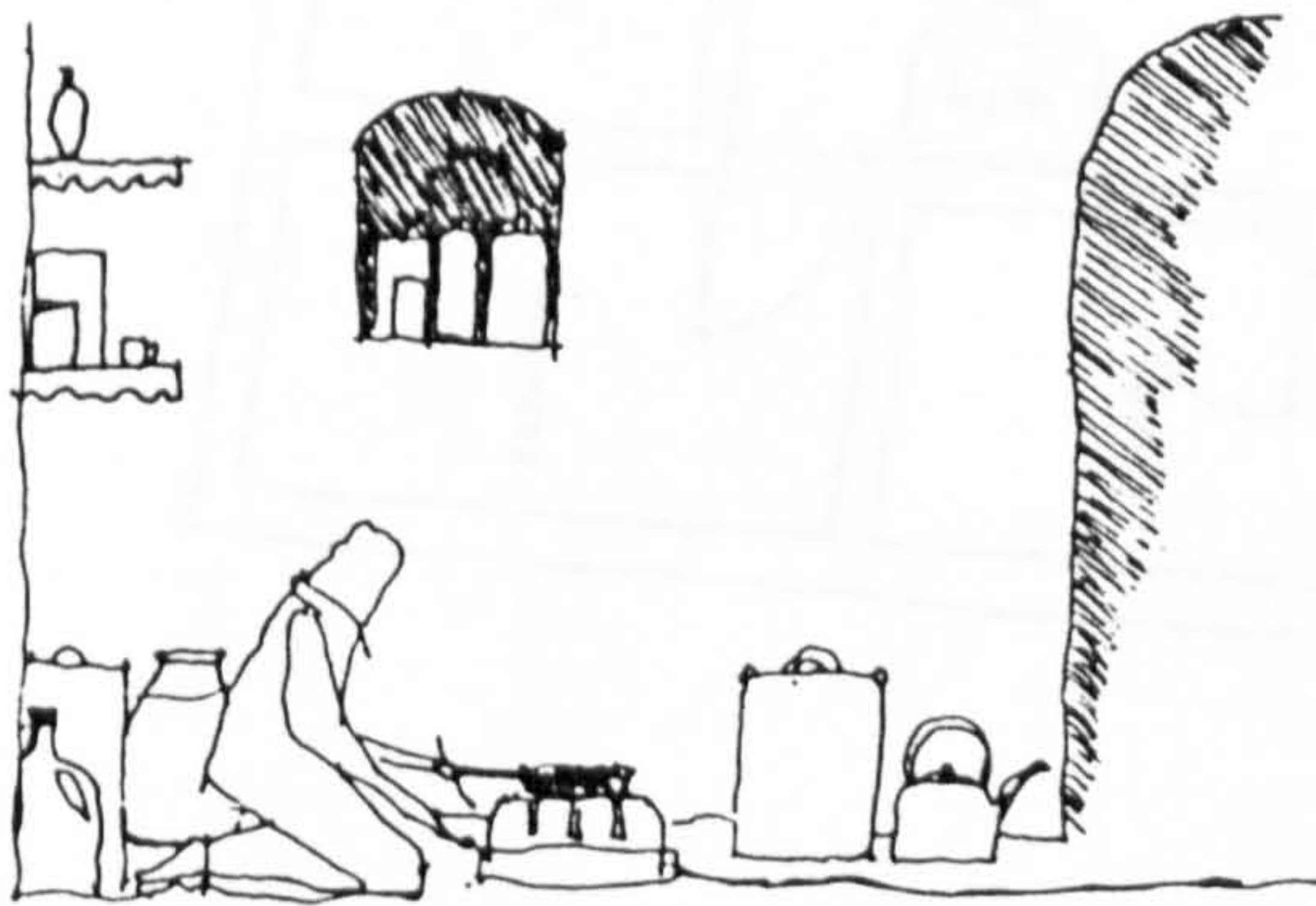
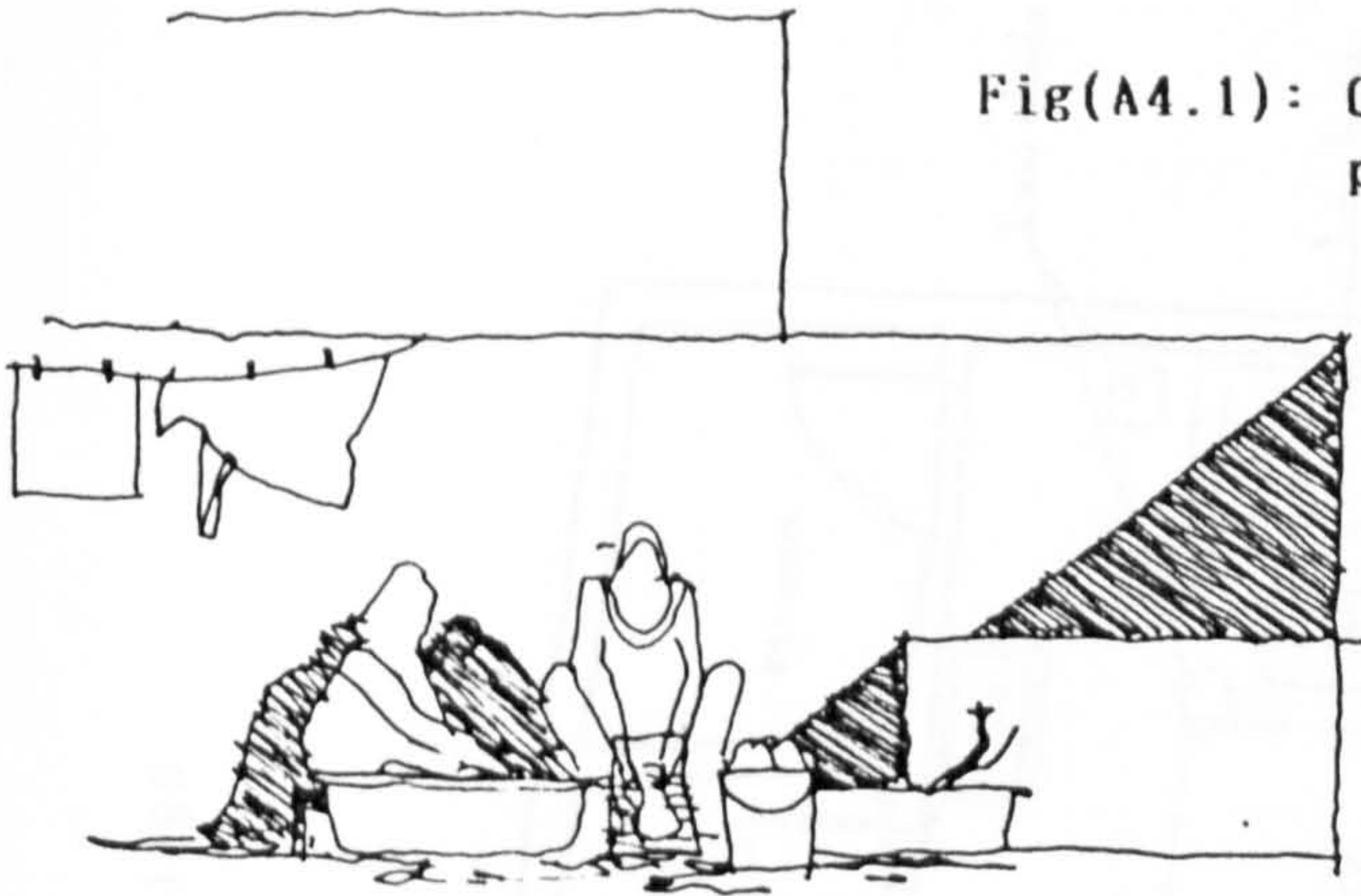
Female visitors are usually received anywhere in the house.

A4.10 PERSONAL PRIVACY

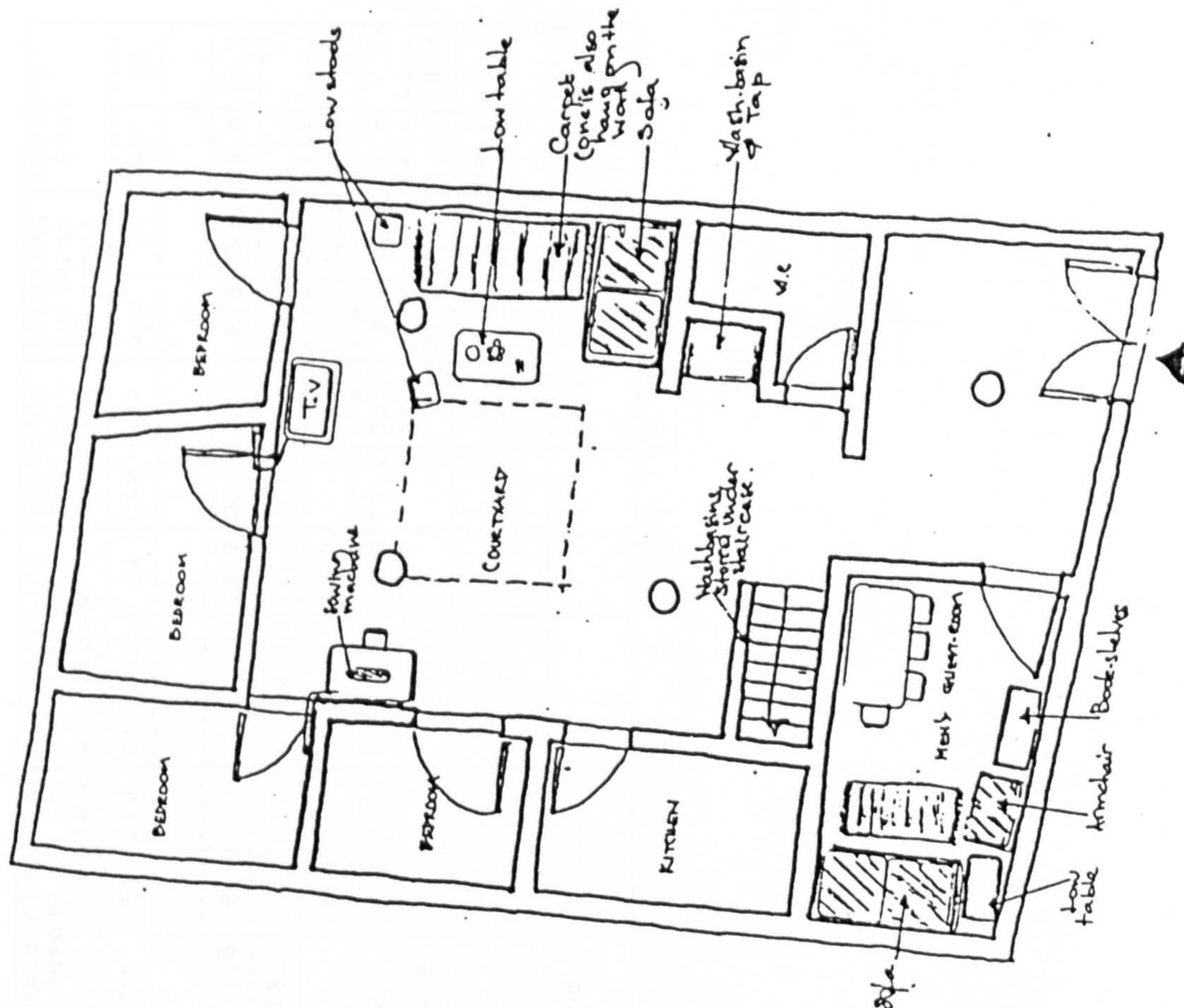
Personal privacy or more precisely the freedom to carry out activities without interfering with - or being interfered with - by other members of the family, has never been a major issue for the traditional Algerian family. This could be explained by the fact that there were not many different interests to cater for. By many of their chores, most women were housebound and in a way most of their activities evolved around rearing the usually very large families. However, the parents' bedroom or the 'conjugal family bedroom' was seen as the very private space of the nuclear family where the housewife could retreat and not be disturbed by other members of the extended family. Men's personal privacy needs were usually fulfilled by the male guest room. It is there that most men retired when back from work. Children were usually kept off this 'men's territory'.

Nowadays, with the spread of education, the money economy, and the change in technology and women's social status, the need for personal privacy has evolved; the multi-functionality of the traditional space is increasingly replaced by function-specific rooms.

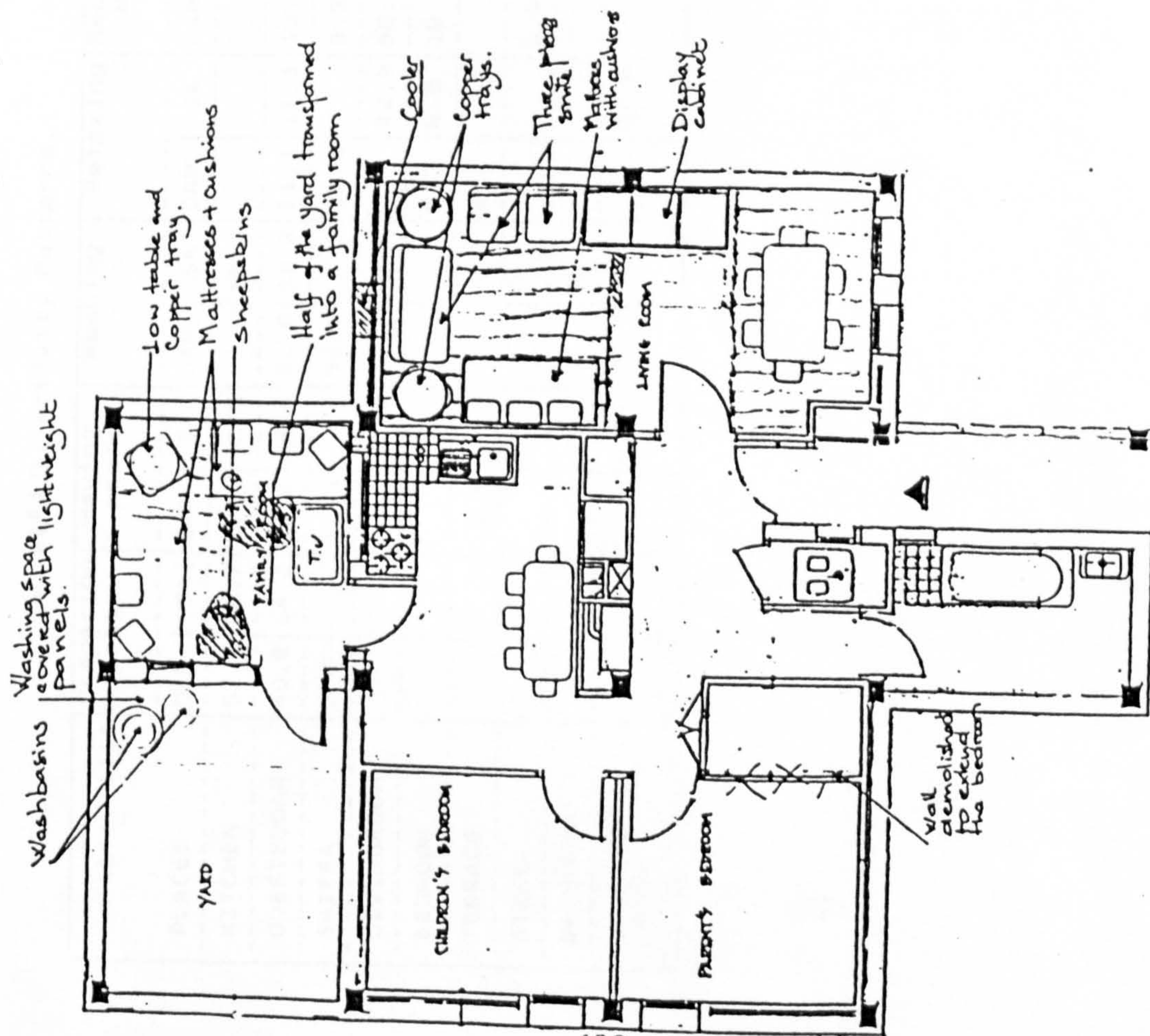
Fig(A4.1): Comparison between old and new activity patterns and usages of place.



Furniture layout in a traditional house (Quartier des Anciens Moudjahidines)



Furniture layout in a modern flat (Sidi-Abbaz)



Fig(A4.2): Comparison between traditional and new furniture groupings and usages of places.

Table(A4.1): Activity Patterns.

ACTIVITIES	Preparing food		Having meals		Washing		Relaxing		Receiving Male		Receiving Female		Sleeping Parent (Winter)		Sleeping Parent (Summer)		Sleeping Children (Winter)		Sleeping Children (Summer)		Child's Play	
	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA	QAM	SA
PLACES																						
KITCHEN	57.1	85.7	2.4	40.5		13.3											2.4					
OUESTEDDAR	40.5	14.3	78.0	32.4	61.0	43.3	71.1	17.1	16.7		71.8	8.0					22.0		5.9	39.1	12.1	40.7
SKIFFA	2.4		17.1		36.6		17.8		8.3		23.1		11.1		2.9						6.1	
LIVINGROOM				18.9	2.4			42.9	50.0	100		20.0			41.7			8.3		43.5		
BEDROOM							6.7	8.6	19.4		2.6	4.0	88.9	100	2.9	20.8	75.6	33.3	2.9	8.7	3.0	
TERRACE			2.4				4.4				2.6		2.8		94.1				91.2			3.7
STREET									5.6													
BATHROOM						43.-																
CHILDREN'S ROOM				8.1				31.4			68.0							58.3		8.7		7.4

Glossary

1. Azzaba: Highest position in the religious assembly.
2. Charaa: Main street in the traditional settlement.
3. Dar: (pl Dur); a large house.
4. Djemaa: executive assembly
5. Driba: Cul-de-sac.
6. Hadith: Report or tradition of a precedent set by the Prophet Mohamed.
7. Hammam: Public bath.
8. Hijrah: Departure or emigration of the Prophet Mohamed from Mekkah to Medina.
9. Hisbah: In its widest sense the function of ensuring that the precepts of the Islamic Law particularly those of moral nature are observed.
10. Kittah: (pl khittat); Plot of land or Quarter.
11. Ksar: (pl Ksour); Traditional walled town.
12. Mashrabyah: Screen or projecting oriel window with a wooden lattice work enclosure.
13. Qadi: Judge.
14. Quibla: Direction of prayer towards Mekkah.
15. Ousteddar: Courtyard.
16. Sheri'a: The sacred revealed law of Islam.
17. Skiffa: Double bended entrance.
18. Shuf'ah: (Right of) Pre-emption
19. Sunnah: Historically there are three principal stages in the concept of the Sunnah. During the first century of Islam the term meant the local custom or the traditional practice. For the early schools of law it signifies the generally accepted doctrine of the school. And from the time of El Shaffi'i onwards it denotes the model behaviour of the Prophet Mohamed- The practice he endorsed and the precedents he set.

- 20. Soff: Party.
- 21. Souk: Market.
- 22. Tahamelt: Secondary street in the traditional settlement.
- 23. Waqf: A settlement of property under which ownership of the property is immobilised and the usufruct therefore is devoted to a purpose deemed charitable by the law.

BIBLIOGRAPHY

- Abdullah Yusuf Ali. "The Holy Qur'an: Text, translation and commentary." Khalil Al Rawaf Ltd, U.S.A, 1946.
- Abu-Lughod, J. "Contemporary relevance of Islamic urban principles." In *Ekistics* no.280, Jan/Feb, 1980. pp.6-10.
- Agnew, J. et al. "the city in cultural context." Allen and Unwin Ltd, London, 1984.
- Al-Azzawi, S. "The courtyards of oriental houses in Baghdad: non functional aspects." In Hyland, A., and Al-Shahi, A.(eds). 'The Arab house.' Proceedings of the Colloquium held in the University of Newcastle upon Tyne, 15/16 March 1984. CARDO, 1986. pp.53-60.
- Al-Shahi, A. "Welcome, my house is yours: values related to the Arab house." In Hyland, A., and Al-Shahi, A.(eds). 'The Arab house.' Proceedings of the Colloquium held in the University of Newcastle upon Tyne, 15/16 March 1984. CARDO, 1986. pp.25-31.
- Al-Suyuti . "Al-Muwatta and its interpretations." Dar Ihya al Kutub al-Arabiyyah, Cairo, (n.d).
- Altman, J. "Observational study of behaviour: sampling methods." In *Behaviour*, V.49, 1974.
- Altman, I. "The environment and social behaviour: privacy, personal space, territory, crowding." Monterey, CA.: Brooks/Cole Publishing Co., 1975.
- Altman, I. "Privacy: a conceptual analysis." In *Environment and Behaviour*, V.8, no.1, 1976. Altman, I. "Privacy regulation: culturally universal or culturally specific?" In *Journal of social issues*, V.33, no.3, 1977. p.66-84.
- Altman, I., and Chemers, M. "Cultural aspects of environment behaviour relationships." In Triandis, H. and Brishu, R.(eds). 'Handbook of cross-cultural psychology.' V.4, New-York: Allyn and Bacon, 1980.
- Arberry, J. "The Koran interpreted." London: George Allen and Unwin Ltd, 1955.
- Arensberg, C, and Kimball, S. "Culture and community." Harcour Brace and World, New York, 1965.
- Barker, R. "Ecological psychology." Stanford, Calif.: Stanford University Press, 1968.

- Banham, R. "The architecture of the well-tempered environment." Architectural Press, London, 1973.
- Bauman, Z. "Culture as praxis." Routledge and Kegan Paul, London, 1973.
- Benachenou, A. "L'exode rural en Algerie." Presses d'ENAP, Alger, 1979.
- Benchouria, T.. "L'economy d'Algerie." Maspero, Paris, 1980.
- Benevolo, L. "The origins of Modern town Planning." Routledge and Keegan Paul, London. 1967.
- Benevolo, L. "The history of the city." MIT Press, Cambridge, MA, 1980.
- Blowers, A., and Hamnett, C. "The future urban society". In 'The future city.' The Open University Press, 1973.
- Blumenfeld, H. "The modern Metropolis." MIT Press, Cambridge, MA, 1972.
- Boudon, P. "Pessac de Le Corbusier." Dunod, Paris, 1969.
- Bourdieu, P. "The Algerians." Boston: Beacon Press, 1962.
- Bourdieu, P and Sayed, A. "Le Deracinement: la Crise de l'Agriculture Traditionnelle en Algerie." Paris, Edition de Minuit, 1964.
- Bourdieu, P. "The Berber house." In Douglas, P.(ed). 'Rules and meanings.' New York: Penguin, 1973.
- Breese, G.(ed). "The city in newly developing countries." Prentice-Hall. New Jersey, 1969.
- Brolin, B. "Chandigarh was planned by experts, but something has gone wrong." Smithsonian, V.3, no.3, June 1972. pp.56-63.
- Brolin, B. "The failure of Modern Architecture." London, Studio Vista, 1976.
- Campbell, D. "Degrees of Freedom and the case study." In Comparative Political Studies, V.8, no.2, July 1975. pp.178-193.
- Canter, D. "Architectural psychology." Proceedings of the conference held at Delandhi, 1970.
- Canter, D. "The psychology of place." Architectural Press, London, 1977.

Charai,A., and Lazrak,A. "Dar Lamane housing community, Casablanca, Morocco." In The Architectural Review, V.CLXXX, no.1077, November 1986, pp.86/11 - 108/11.

Chombart de Lauwe,P. "Famille et habitation: sciences humaines et conceptions de l'habitation." Centre National de la Recherche Scientifique, Paris, 1959. Coleman,A. "Utopia on trial, vision and reality in planned housing". Hilary Shipman, London, 1985.

Cooper-Marcus,C. "User needs research in housing." In Cornaton,M. 'Les Regroupements de la Decolonisation en Algerie.' Paris, les Editions Ouvrieres, 1967.

Correa,C. "Architecture and identity, Exploring Architecture in Islamic Cultures 1." Powell,R.(ed). Singapore, Concept Media for the Aga Khan Award for Architecture, 1986.

Craik,K. "Environmental psychology." Annual Review of psychology, 24. 1973. pp.403-22.

Curtis,J. "Modern Architecture since 1900." Phaidon, Oxford 1982.

Dahmani,M. "L 'Algerie, legitime historique et continuite politique." Paris, Edition le Sycomore, 1979.

Danby,M. "The internal environmental aspects of the traditional Arab house and their relevance to modern housing". In Hyland,A., and Al-Shahi,A. 'The Arab house.' Proceedings of the colloquium held in the University of Newcastle upon Tyne 15/16 March 1984. CARDO, 1986. pp.83-90.

Danby,M. "The conflict between modern values and cultural identity in Urban design." Research paper, CARDO, University of Newcastle Upon Tyne, 1983.

Daunton,M.. "House and home in the Victorian city:working-class housing, 1850-1914." Edward Arnold, London, 1983.

Davis,G., and Ayers,V. "Photographic recording of environmental behaviour." In Michelson,W. (ed). 'Behavioural research methods in Environmental design.' Stroudsburch, Pa.: Dowden, Hutchinson & Ross, 1975.

Davis,S.(ed)."The form of housing." Van Nostrand Reinhold, New-York, 1977.

Deluz,J. "Apercu Critique sur l'Architecture et l'Urbanisme a Alger." EPAU, Alger, 1979.

Despois,J, and Raynal,R. "Geography de l'Afrique du Nord-Ouest." ed., Payot, Paris, 1967.

Despois,J. "L'Afrique Blanche Francaise: l'Afrique du Nord." Presse Universitaires de France, Paris. (n.d).

Diba,J. "Shushtar new town, Iran." In the Architectural Review, V.CLXXX, no.1077, November 1986. pp.86/11 - 108/11.

Donnadieu,H., and Didillon,J. "Habiter le desert, les maisons Mozabites." Architecture & Recherche, Pierre Mardoza, Bruxelles, 1977.

Donzelot,J. "La police des familles." Editions de Minuit. Paris, 1977. Translated to English by R. Hurley. 'The policing of families.' Hutchinson, London, 1977.

Dunham,D. "The courtyard house as a temperature regular." In the New Scientist, September 1960. pp.663-666.

Dunleavy,P. "The politics of Mass Housing in Britain 1945-1975". Clarendon Press, Oxford, 1981.

Earle,P. "Corsairs of Malta and Barbary". Sidgwick and Jackson, London, 1970.

El-Bukhary. "Sahih al'Bukhari." 9 parts in 3 vols. Kitab al-Sha'ab, Cairo, (n.d).

El-shakhs(eds). "Development of Urban Systems in Africa". New York, Praeger, 1979, p.80.

Ermuth,F. "Residential satisfaction and urban environmental preferences." Geographical Monograph no.3. Toronto: York University, 1974.

Fathy,H. "Architecture for the poor: an experiment in rural Egypt." University of Chicago Press, Chicago, 1973a.

Fathy,H. "Constancy, transposition and change in the Arab city." In Brown,C.(ed). "From Medina to metropolis." New Jersey: The Darwin Press. Princeton, 1973b.

Francescato,G., Weidemann,S., Anderson,J., and Chenoweth,R. "Predictors of residents' satisfaction in high rise and low rise housing." JAR 4/3, December 1975. pp.5-9.

Fried,M., and Gleicher,P.. "Some sources of residential satisfaction in an urban slum." In the American Institute of Planners, Journal. 27, 1961. pp.305-315.

Front de Liberation National(ed) "La Charte d'Alger". Alger, 1964.

Gans,H. "The levitowners." New York: Pantheon Books. 1967.

Gautier,E . "Le Passe de l'Afrique du Nord, les Siecles Obscures", ed.,Payot, Paris, 1937.

: Gittus,E. "Flats, families and the under fives." Routledge and Kegan Paul, London, 1976.

Goddard,J. "Oasis modern, essai d'Urbanisme Saharien." Alger, 1954.

Goodey,J., and Mattew,K. "Architects and information." Research paper 1, Institute of Advanced Architectural studies, Kings Manor, York, January 1971.

Gordon,D . "North Africa's French Legacy 1954-1962." Harvard University Press, Cambridge, Massachussets, 1962.

Grunebaum,G. "Islam: Essays in the nature and growth of a cultural tradition." Routledge and Kegan Paul, London, 1955.

Gugler,J.. "Urbanisation and social change in West Africa", Cambridge University Press, London, 1978.

Habraken,J. "Supports: an alternative to mass housing." Architectural Press. London, 1972. (First published in Dutch, 1961).

Hall,E. "The hidden dimension." Garden City, New York: Doubleday, 1966.

Hansen,W.,, and Altman,I. "Decorating personal places: a descriptive analysis." Environment and Behaviour,V.8, 1976. pp.491-504.

Hichcock,J. "Daily activity patterns: an exploratory study." In Ekistics 204, November 1972. pp.323-327.

Horne,A. "A Savage War of Peace, Algeria 1954-1962." London, Macmillan, 1977.

Hyland,A., and Al-Shahi,A. "The Arab house." Proceedings of the colloquium held in the University of Newcastle upon Tyne 15/16 March, 1984. CARDO. 1986.

Ibn-Abd-Elhakem. "Conquete de l'Afrique du Nord et l'Espagne." Edited and translated by Gateau,A. Algiers, 1942.

Jones,W. "World views: their nature and their function." Current Anthropology, V13, no.1, 1972. pp.77-109.

Julian,C . "Histoire de l'Algerie Contemporaine." Press Universitaire de France, Paris, 1964.

Kaddache,R. "Histoire du Nationalism Algerien, Question National et Politique Algerienne 1919-1951". Societe National d'edition et de Diffusion, Alger, 1981.

King,A.(ed). "Buildings and society: essays on the social development of the built environment." Routledge and Kegan Paul, London, 1980.

Knox, A . "New Playground or Wanderings in Algeria." Kegan Paul and co., London, 1881.

Kroeber,A., and Kluckhohn,C. "Culture: A critical review of concepts and definitions." Cambridge: Harvard University, V.XLVII, no.1, 1954.

Lammeri,M. "Privacy and built form." Unpublished M.Phil thesis, Nottingham University, 1987.

Lang,J., Burnette,G., Moleski,W., and Nachon,D.(eds). "Designing for human behaviour." Strongsburgh, Pa. Dowden, Hutchinson and Ross, 1974.

Lansing,J., Marans,B., and Zehner,R. "Planned residential environments." Ann Arbor, Mich.: Report prepared for the U.S. Department of Transportation, Bureau of Public road, 1970.

Lansing,J. "Residential location and urban mobility: the second wave of interviews." Ann Arbor, Mich.: Survey Research Center, Institute for Social Research, University of Michigan, 1966.

Lapidus,I. "Muslim cities in the later Middle Ages." Harvard University Press, Cambridge, Mass, 1967.

Laroui, A. "The History of the Maghrib, an interpretive essay." Princeton University Press, Princeton, New Jersey, 1977.

Laufer,R., Proshansky,H., Ittelson W., and Rivlin L.,(eds). "Environmental psychology: Plan and his Physical setting." New York: Holt, Rinehart & Winston, 1970.

Lavedan,P . "Histoire de l' Urbanisme." V.3, Paris, 1958.

Lawless,R . "Algeria : Functional and Social Transformation of a Colonial Urban System under a Planned Economy." In Obudho,R., and Cornation,M. "Les Regroupements de la Decolonisation en Algerie." Paris, les Editions Ouvrieres, 1967.

Lawrence,R. "A more humane history of homes: research method and application." In 'Human Behaviour and environment: advances in theory and research.' V.8: home environments. Altman,I., and Werner,C. (eds). Plenum Press. New York, 1985.

Lawrence,R. "Housing, dwellings and homes: design theory, research and practice". Wiley, 1987.

Leswe,M . "Une Experience de Deplacement de Population: les Centres de Regroupements en Algerie." *Annals de Geography*, V.71, no.388, 1962.

Le Tourneau,R. "The Almohad Movement in North Africa in the Twelfth and Thirteenth centuries." Princeton University Press, Princeton, New Jersey, 1969.

Levi-Strauss,C. "Tristes tropiques." Paris: librairie Plon, 1955.

Lofland,L. "the modern city: spatial ordering." In "Environmental psychology." Proshansky et.al, (eds). New York: Holt, Rinehart & Winston, 1970.

Mahdjoubi,L., "For an Improved Rural Housing to Limit Distress Migration." MPhil Thesis, Department of Town and Country Planning, University of Newcastle Upon-Tyne, 1985.

Mahsas,A . "Le Mouvement Revolutionnaire en Algerie." Harmattan, Paris, 1979.

Malik,A. "Al-Muwatta wa sharhiha lil-suyuti." (Al-Muwatta and its interpretation by Al-Suyuti), Dar Ihya al Kutub al-Arabiyyah. Cairo, (n.d).

Marans,R. "Survey research." In 'Behavioural research methods in environmental design.' Michelson,W (ed). Stroudsburg, Pa.: Dowden, Hutchinson & Ross. 1975.

Marcais,G. "L'urbanisme musulman." Cinquieme congres de la federation des societes savantes de l'Afrique du Nord. Alger, 1940. pp.13-34.

Marcais,G. "La conception des villes dans l'Islam." *La Revue d'Alger*, V.2, 1945. pp.517-533.

Marcais,G . "La berberie Musulmane et l'Orient au Moyen Age." Montaigne, Paris, 1946.

Margulis,S. "Conceptions of privacy: current status and next steps." In *Journal of social issues*, V.33, no.3, 1977. pp.5-21.

Martin,L., and March,L. "Urban space and structures". Cambridge University Press, 1972.

McCarrey,M., Peterson,L., Edwards,S., and von Kulmiz,P. "Landscape office attitudes: reflections of perceived degree of control over transactions with the environment." *Journal of*

Applied Psychology, V.59, 1974. pp.401-403.

McCord,N . "North-East of England, the region's development 1760-1960". Batsford Ltd, London, 1979.

Mercier,M. "La civilisation urbaine au M'Zab." Pfister, Alger, 1922.

Michaelson,W., and Reed,P. "The theoretical status and operational usage of lifestyle in environmental research." Research paper no. 36. University of Toronto, Center for Urban and Community Studies, 1970.

Michelson,W. "An empirical analysis of urban environmental preference." The American Institute of Planners, Journal 32, 1966. pp.355-360.

Michelson,W. "Urban sociology as an aid to urban physical development: some research strategies." The American Institute of Planners, Journal 34, 1968. pp.105-108.

Michelson,W. "Man and his urban environment: a sociological approach." Reading, Mass.: Addison-Wesley, 1970.

Michelson,W. "Environmental choice, Human behaviour and residential satisfaction." Oxford University Press. New-York, 1977.

Moughtin,J. "Hausa Architecture." Ethnographica, London, 1985.

Nelson,H.(ed). "Algeria, a country study." Foreign Area studies, The American University, 1979.

Noor,M. "An analytical Study of traditional Arab domestic architecture." Ph.D thesis. University of Newcastle upon Tyne, 1979.

Oliver,P.(ed). "Shelter, sign and symbol." Barrie and Jenkins, London, 1975.

Pauty,E. "Villes Spontanees et villes creees en Islam." Annales de l'Institut des Etudes Orientales, IX. Alger, 1951. pp.52-75.

Peil,M. "Social science research methods." Hodder and Stoughton, London, 1982.

Perin,C. "With man in mind." Cambridge, Mass.: M.I.T. Press, 1970.

Pickthall,M . "The meaning of the Glorious Koran" .

Pikusa,S. "Adaptability: designing for functional adaptability:

a lesson from history." *Architecture Australia*, V.72, no.1, 1983. pp.62-67.

Planhol,X. "The world of Islam." Ithaca, New-York: Cornell University Press, 1956. pp.23-26.

Porteous,J. "Environment and behaviour: Planning and everyday urban life." Reading, Mass, Addison-Wesley, 1977.

Prenaut,A., "Centralisation de la Decision a Alger, Decentralisation de l'Execution en Algerie: la Mutation des Fonctions Capitales d'Alger". *Cahiers Geographiques de l'Ouest*, no.1, 1978.

Pressman,N., and Tennyson. "Dilemmas facing social scientists and designers." In *Journal of Architectural Education*, V.36, no.4, 1983. pp.16-21.

Proshansky,H., Ittelson,W,andRivlin,G. (eds). "Environmental psychology." New York: Holt, Rinehart & Winston, 1970.

Rabeneck,D., et al. "Housing adaptability?" in *Architectural Design*, February 1974. pp.76-91.

Rapoport,A. "House form and culture." Englewood Cliffs, NJ.: Prentice-Hall, 1969.

Rapoport,A. (ed) "The mutual interaction of people with their built environment." Mouton, the Hague, 1976.

Rapoport,A. "Human aspects of urban form." Pergamon Press, New York, 1977.

Rapoport,A. "An approach to Design Third World Environments." In *Third World planning review*, V.1, no.1, 1979.

Rapoport,A. "Cross-cultural aspects of environmental design." In 'Human behaviour and environment: advances in theory and research.' V.4: environment and culture. Altman,I., Rapoport,A., and Wohlwill,J.(eds). Plenum Press. New York, 1980.

Rapoport,A. "Environmental preferences, habitat selection and urban housing." *Journal of Social Issues*, V.36, no.3, 1980. p.118-34.

Rapoport,A. "The meaning of the build environment: a nonverbal communication approach." Sage, Beverley Hills, CA, 1982.

Rapoport,A. "The measuring of the built environment: a nonverbal communication approach." Sage, Beverly Hills, CA. 1982.

Ravereau,A. "Le M'Zab, une lecon d'architecture." Sindbad,

Paris, 1981.

Ravereau,A. "Apprendre la tradition". In technique et architecture, no.345. December 1982- January 1983. pp.75-76

Ravetz,A. "The use of surveys in the assessment of residential design." In Architectural research and teaching, V.1, no.3, 1971. pp.23-31.

Ravetz,A. "Remaking cities." Croom Helm. London, 1980.

Reizenstein,J. "Linking social research and design". Journal of Architectural research. 4/3 December,1975. pp.26-36.

Ripault-Megerand,M . "Les Villages Socialistes en Algerie." Annuaire de l'Afrique du Nord, V.14, 1975.

Robinson,I.,et al. "Trade-off Games." In Michelson,W.,(ed). 'Behavioral research methods in environmental design.' Stroudsburg, Pa.:Dowden, Hutchinson & Ross, 1975.

Roche,M. "Le M'Zab: Architecture Ibadite en Algerie." Arthaud, Paris, 1970.

Saarinen,T. "Environmental Planning: perception and behaviour." Houghten Mifflin Company, Boston, 1976.

Sanoff,H. "Design games: playing for keeps with personal and environmental design." William Kaufman, Los Altos, 1979.

Sari,D. "Premier aperçu sur l'accroissement de la population de 1966 a 1977, les rapports et incidences sur les aménagements régionaux en cours." Cahiers de l'aménagement de l'espace, no.2, CNERAT. Alger, April/June 1978.

Sauvaget,J. "Esquisse d'une histoire de la ville de Damas." Revue des études Islamiques, V3, no.4. Paris, 1934.

Shalaby,T. "Behavioural patterns and the Arab house." In Hyland,A., and Al-Shahy,A.(eds). 'The Arab house' Proceedings of the colloquium held in the University of Newcastle upon Tyne 15/16 March, 1984. Cardo, 1986. pp.73-79.

Stone,P. "Urban development in Britain: standards, costs and resources, 1964-2004". V.1: Population trends and housing. Cambridge university Pr Press, Cambridge, 1970.

Szalay,L., and Maday,B. "Verbal associations in the analysis of subjective culture." Current Anthropology, V.14, no.1-2, 1973. pp.33-50.

Szalay,L., and Bryson,J. "Measurement of psycho cultural

distance: a comparison of American blacks and whites." Journal of Personality and Social Psychology, V.26, no.2, 1973. pp.166-177.

Stewart,J. "The future of planning theory - Whither urban design?" In Planning Outlook, V.24, University of Newcastle upon Tyne, 1982. pp.74-82.

Thomas-Stanford,C. "About Algeria." John Lane the bodley head, 1911.

Turner,J. and Fichter,R.(eds). "Freedom to build: Dweller control of the housing process." Collier-Macmillan, London, 1972.

Vallet,R. "Le Sahara Algerian." Alger, 1927.

Visher,J. "The adaptation and control model of user needs: a new direction for housing research." In Journal of Environmental Psychology, V.5, no.3, 1985. pp.287-98.

Walter,G. "Residential density and building form." Report no.1, Liverpool City Planning Department. Nvember, 1963.

Watz,S. "Women's housing needs in the Arab cultural context of Tunisia". in Ekistics 321, Jan-Feb. 1985. pp.23-34.

Wenger,P . "Mixed living and working spaces as open structures." in 'Proceedings of IYSH- International conference on housing planning and design'. V.2, Nanjing institute of technology, PR China, 1987.

Westin,A. "Privacy and freedom." New-York, Atheneum, 1970.

Wiet,G. "Cairo: city of Art and Commerce." translated by Seymour,F. Norman: The University of Oklahoma Press, 1964.

Williams,R . "Culture and Society:1780-1950." Routhledge and Kegan Paul, London,1958

Williams,R . "The sociology of culture." Schocken Books, New-York, 1982

Wilson,R. 'Livability of the city: attitudes and urban development." In 'Urban growth dynamics.' Chapin,F., and Weiss,F.(eds). New York, Wiley and sons, 1962.

Wohlwill,J. "Human adaptation to levels of environmental stimulation." Human Ecology, 2, 1974.

Young,M., and Willmott,P. "Family an kinship in East London." London: Routledge & Kegan Paul, 1957.

OFFICIAL DOCUMENTS

Commissariat National aux Recensements et Enquetes Statistiques ,
"Recensement General de la Population et l'Habitat". Alger,
1987.

Commission Nationale aux Recensements et Enquetes Statistiques,
"Recensement General de la Population et de l'Habitat", Alger,
1966 and 1977

Journal Officiel de l'Algerie, 1922, Decret 5-722 of 5 July 1922.

Journal Officiel de l'Algerie 1960b. Decret 60-960 of 6
September 1960.

Journal Officiel de la Republique Algerienne 1967. Ordonnance
67-24 of 18 January 1967.

Journal Officiel de la Republique Algerienne. 1975e. Decret
75-110 of 26 September 1975.

Journal officiel de la Republique Algerienne (JORA). Ordonnance
75-67 of 26 September 1975.

JORA. Decret 75-109 of 26 September 1975, article 1.

JORA. Decret 75-103 of 27 August 1975, article 3.

JORA. Decret 75-67 of 26 September 1975, article 4.1.

JORA. Decret 75-110 of 26 September 1975.

JORA. Decret 75-67 of 26 September 1975, article 42.

Rapport general du II Plan Quadriennal, Algiers, 1974

Rapport du I Plan Quinquenal, Algiers, 1980

Rapport du II Plan Quinquenal, Algiers, 1985

Secretariat d'Etat au plan. "Circulaire concernant le plan
communal d'urbanisme directeur: C1-PUD." Algiers, 1974.

Societe Nationale des Materiaux de Construction, Rapport
d'activites, Algiers, 1979.

United Nations . "World Population Prospects, estimates and
projections as assessed in 1984." New York, 1986.

OTHER RESEARCH WORKS CONSULTED.

Abba, A. "Traditional architecture in Algeria, from the past to the future". M.Phil Thesis. York University. 1985

Benhamrouche, M "Courtyard houses in Algiers." M.Phil Dissertation. University of Newcastle upon Tyne. 1986.

Zerouala, S. "Architectural education in Algeria." Ph.D Thesis. University of Newcastle upon Tyne. 1986.

